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THE EDUCATION OF
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THE EDUCATION OF EXCEPTIONAL CHILDREN

A CONSIDERATION OF PUBLIC SCHOOL
PROBLEMS AND POLICIES IN THE FIELD
OF DIFFERENTIATED EDUCATION

BY

JOHN LOUIS HORN, Ed.D.

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EDITOR'S INTRODUCTION

Probably the majority of the problems with which the educational world has been concerned during the last thirty years have centered around the necessity of breaking down in as many ways as possible the tendency towards uniformity of treatment of the individual pupil. As soon as we had finally determined that the United States would support at public expense a school system and had gotten well under way the effort to secure by proper legislation compulsory attendance at school, we were confronted with the great problem of organizing the hosts of children into groups which were approximately able to profit by uniform courses of study and methods of instruction. The historian of education in the United States will always testify that a really remarkable piece of educational organization was effected. The great public school system of the United States, divided as it is into elementary, secondary and higher education, despite all possible shortcomings, is a monument to the work of a group of educational administrators whose problem it was to secure the greatest returns from a relatively limited amount of available money.

No sooner had this been accomplished and, in fact, long before this educational organization had been completely brought about, than our students of the problem saw clearly that much remained to be done, if a really

effective educational system were to be maintained. The reorganization of the curriculum, the work in educational measurements, the development of intelligence tests, the organization of various types of specialized schools in our larger cities, all have as their chief stimulus the necessity of meeting more effectively the needs of the individual child. Group education is a necessity. It carries with it certain real advantages to the great majority of those being educated. From the standpoint of finance it must always play a major part in the administration of large numbers of children. To an ever-increasing extent, however, all concerned recognize that the problem of the individual school system is to determine how far it is possible to break away from the general idea of mass education and replace it with the idea of specific training. Long before there had been any organized work in educational measurements or in intelligence testing, the campaign for "breaking down the lockstep" of our public schools had begun. The work of certain great pioneers still stands out brightly as an inspiration for refinement of their methods and ideas. In the larger cities it was soon seen that certain types of pupils could be separated from the other pupils to the advantage of both groups. Schools for non-typical children are among the first evidences of an appreciation of the necessity for the modification of the work of at least some individuals. While we are yet really not far advanced in the development of effective facilities for the treatment of the non-typical, the serious efforts of many of our larger school systems deserve the highest commendation.

While relatively few of the teacher-training institu-

tions as yet have greatly emphasized the need for special training of administrators in the various specialized types of work necessary for the non-typical, it is becoming increasingly evident that this phase of professional preparation should not be overlooked. In fact, a city school superintendent who does not intelligently realize the need for the introduction, as rapidly as consistent with the financial resources of the district, of specialized schools is not properly equipped for his responsibilities. Investigations of actual conditions in even the larger cities of the United States show a surprising lack of uniformity in the type, character and number of special schools. All investigations reveal that even our small school systems could to the greatest advantage educationally establish some of these schools. Those who have actually come in contact with these problems are a unit in their testimony that money expended for all such schools is wisely expended, both from the standpoint of the benefit to the individuals enrolled in these schools and for those who remain in the schools for typical children. In fact, not infrequently the strongest argument in favor of the schools for the non-typical is the increasing of the efficiency of the teachers in the schools for normal children.

The classification made by the author of this volume, while broader than that sometimes made, is logical. Unless a system is unusually large, it is administratively desirable to include all non-typical children under one general division, if the needs of all are to be properly conserved.

In the belief that a volume of this sort will be of real assistance to institutions offering special courses dealing

with auxiliary and special education, and with the conviction that a volume of this sort will also be of real value to thousands of educational administrators, this study of "The Education of Exceptional Children" is submitted as a volume of the Century Educational Series.

PREFACE

Modern educational procedure as exemplified in American city schools, is the outcome of a comparatively brief period of development. We are still engaged, to a large extent, in the formulation of our basic educational theory. This volume represents an effort to contribute toward the establishing of a theory in one special field—the problems of organization and instruction presented by those non-typical children who belong in the public schools.

The writer has taken his point of departure from several of the chapters of his "The American Elementary School." An attempt has been made to define the nature or degree of handicap or excess ability which makes the child a special educational problem; to determine the types of exceptional children which properly belong in the public school; to formulate a general theory of special education; to indicate the present status of these children in city schools; and to deal with the various specific problems presented. Finally, a definite and, it is hoped, a constructive educational policy is proposed for each group. The bibliographies at the end of the several chapters have been carefully selected to place before the student all of the worthwhile material available.

The various facts presented regarding present practice in American city schools were gathered by the author

in the course of an extensive investigation undertaken for purposes of this study. The validity of the means of securing this information is assumed throughout the book, but a statement of the method of the investigation will be found in the appendix.

I am indebted to Dean C. E. Chadsey of the University of Illinois for many suggestions made as a result of reading this volume in manuscript. I am indebted to my friend, Professor Stanley I. Rypins, of the San Francisco State Teachers' College, for advice in matters of form. I am under obligation to my colleague, Miss Flora Belle Ludington, reference librarian at Mills College. Miss Ludington prepared an exhaustive preliminary bibliography and took responsibility for the preparation of the index. I am, finally, indebted to my students of the 1923 summer session at the University of Illinois; their enthusiasm and earnestness helped me to present this material in a form which, I trust, may serve other students, whether they be enrolled in institutions of learning or not, as an introduction to this fascinating social-educational problem.

JOHN LOUIS HORN

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PART I
GENERAL CONSIDERATIONS

THE EDUCATION OF EXCEPTIONAL CHILDREN

CHAPTER I

A PRELIMINARY SURVEY

I. Is There a Problem of Special Education?

Children are variable—Some children are extraordinarily intelligent. The reader may confirm this everyday observation by taking from his library shelf at random almost any work of autobiography that he finds handy. Says Hamlin Garland, for example, in describing conditions in his home before he himself had attained the age of eight: "Harriet's devotion to literature, like my own, was a nuisance. If my mother wanted a pan of chips she had to wrench one of us from a book, or tear us from a paper. If she pasted up a section of Harper's Weekly behind the washstand in the kitchen, I immediately discovered a special interest in that number, and likely enough forgot to wash myself. When mother saw this, (as of course she very soon did,) she turned the paper upside down, and thereafter accused me, with some justice, of standing on my head in order to continue my tale."

Edward Bok relates how, before he was seven years old, and within the first day or two of entering a school whose

very language was unknown to him, he "balked at following the Spencerian style of writing in his copy-books . . . and . . . refused to copy his writing lessons." When his teacher could do nothing with him, Edward was told to sit down at the principal's own desk and copy the lesson. He sat, but he did not write. Thereafter he showed his father "a specimen of Italian handwriting which he had seen in a newspaper, and explained to him that this simpler penmanship seemed to him better for practical purposes than the curlicue fancifully embroidered Spencerian style; that if he had to learn penmanship, why not learn the system that was of more possible use in after life?" The outcome of his obstinacy and argument was that "a new copy-book was given him with a much simpler style."

On the other hand, some children are extraordinarily dull. Of all the children who enter the first grade of the American public schools every year at the approximate age of six, from one third to one fourth find it impossible to master the curriculum content of that grade. Many children nine, ten, and even eleven years of age are to be found in the schools of every American city who have not yet attained a degree of mastery over the rudiments to entitle them to rank as second-graders.

But variation in mental capacity is not the only kind of difference to be found among children. They also differ temperamentally in such a way as to make certain of them very particular educational problems. Certain nervous instabilities, psychopathic and antisocial tendencies, arising from inheritance, environmental and previous history, or from both causes combined, begin to develop soon after entering school and, if neglected, become fixed,

continually more difficult to eradicate, and potentially harmful to the individual himself and to the social group in which he is preparing to live as a contributor and participant.

That there are physical differences among children need hardly be pointed out. Not only are there such crude deviations as are represented by total blindness and deafness; by physical deformities that handicap future usefulness unless compensation is provided by special education; tubercular, anemic, and other debilitating factors such as weak heart; there are also physical differences more difficult to discern and to measure, differences in the rate of development toward maturity. Physiological and anatomical age, when we have learned to measure them with exactness, will be more reliable as an index of physical status than chronological age, in the same measure as mental age has already demonstrated itself to be more reliable in the determination of intelligence than the mere lapse of time since birth.

School procedure is uniform—The most outstanding characteristic of childhood, as of all living matter, is variation. And yet the characteristic method of procedure in the educational treatment of children to-day, as throughout the entire past of organized educational practice, is uniformity. It would be impossible to set the day of harvest in terms of the calendar, but children are sent to school on the basis of the amount of time that has elapsed since birth. Under the very same conditions of sun and rain, the flowers which the gardener sows come into bloom on different days, but all children are sent to school at age six.

The problem of special education—There does exist a

problem of special education. It is found in the fact of variability among the children to be educated. This variability of endowment, temperamental and physical condition, never has been and never can be met by uniformity of procedure. To persist in such uniformity means, quite clearly, to deprive some children of their rightful inheritance.

When a large number of children are gathered together for instruction, there are always found some who deviate from type in one or more ways, and, therefore, represent special educational problems. The ordinary way, historically, has been to do away with, disregard, ridicule, or at best be merciful to deviates. To the normal or average individual there is something almost uncanny about marked deviation from type.

Perhaps the furthest that our civilization approached toward humane treatment of deviates, before the real attack on the problem that is so recent in origin as to be almost contemporary, was to treat unfortunate persons with a considerable degree of Christian mercy and kindness. The same, impersonal attitude which might lead to a compensation of the handicap by education was difficult to cultivate among people who conceived of superstitious explanations for the occurrence of the facts. In an age when an insignificant proportion of the entirely typical part of the population were subjected to formal education, it seemed unnecessary to undertake to salvage by education the members of the community marked by some acute deviation, persons from whom at best might be expected less than the typical were capable of contributing.

With the concept of democracy and the ideals of com-

pulsory universal education, these questions assume new aspects. The law requires that all children present themselves for education; the need for meeting the problem of educating large numbers makes the practice of individual instruction, which might automatically take care of many deviates, an impractical process; the method of simultaneous instruction is devised to meet the situation. Simultaneous instruction is based on the assumption of some, even though crude, homogeneity. This homogeneity is found in the most obvious characteristic,—approximate similarity of age. The children are grouped in this manner, and minor variations of every kind, such as slight deafness, blindness, dullness, are taken care of in a variety of modifications of the procedure, in frequent reclassification of the groups, and in the common agreement that perfect evenness of progress and equality of ultimate attainment are not to be expected.

But some children are totally deaf or totally blind or completely lacking in intelligence. No amount of resiliency in the prescribed procedure can take care of these children. They cannot be subjected to the process of instruction at all, as it is organized for the typical group. And yet they cannot be disregarded. Democracy means equality of opportunity. We should not be acting in accordance with our ethical and social ideals if we failed to educate those children who are not susceptible of treatment in the standard manner devised for the group.

Moreover, purely selfish motives operate to interest society in the education of these children. Complete lack of education almost always means lack of ability in the matter of self-support. In our society persons completely incapable of self-support are supported at the cost

of the rest of the group. In so far as the type of education particularly adapted to the kind of deviation makes the recipient of this education self-supporting in whole or in part, in so far as the community is relieved from that burden. Ultimately, it is probably cheaper to furnish education than to maintain asylums.

In a democracy such as ours, which supports education liberally, and which demands by law that all children be sent to school for a prescribed minimum number of years, the masses are subjected to a rather crude screen and classification into which most of them fit. The poor of hearing, the partially blind, the dull, the physically under par, and others whose deviation is not very aggravated, find it possible to get through. The school admits them, and as the process of education becomes more and more effective, more and more supplementary provision is made for those who might find the pace severe. Instruction in the open air, the mid-morning glass of milk, school-books with especially large type, and other features serve to make the road easier and the pace within their limitation.

But some of the children are so handicapped that no sort of supplementary treatment will avail to keep them with the group. It is the business of the schools to find ways and means to develop these children to their utmost capacity. Systems do not exist as ends in themselves. Where the children cannot fit into the established system, the system must be adapted to fit the children.

We seem to have been assuming in the foregoing paragraphs that deviation always presents a problem and represents a misfortune. The reader is here reminded, however, that our concept of "exceptional" ultimately

includes those who have an excess of capacity—much better than average intelligence. These children do not represent a “problem” in the narrow sense of being a burden, an inescapable situation which cannot be disregarded. While the very highly endowed, by virtue of their intelligence, do not press on the school for immediate and special handling and therefore can be and indeed are being disregarded, they do present a social problem of conservation, a problem to which we shall return in the chapters which follow.

A number of causes have been effective in deferring a consideration of educational questions presented by the exceptional child until comparatively late in the history of American education. Public education itself, as a social institution, is of comparatively recent origin. The modern humanitarian movement, which devotes itself to the salvaging and relief of handicapped members of the social group, is little older as an effective agency than universal publicly supported schools. Large cities, which provide concentration of the various types of deviation from normal in sufficient number to warrant remedial provision at public expense, are a comparatively recent outcome of our new industrial era, as is the very motivating movement for work of this sort, that social consciousness which admits that one is his brother's keeper. Finally, that application of scientific psychology which goes by the appellation of intelligence measurement, and which is enabling us with ever-increasing reliability to establish differences in intelligence among children and to discover very high and very low endowment, has had the entire history of its establishment within the twentieth century.

II. Which Is the Exceptional Child?

The normal child—The concept of normality is probably very little distinguishable from that of typical or average. One need only think of Jonathan Swift's "Gulliver's Travels" to realize that normality is a comparative, not an absolute, idea, and signifies conformity to the vast mass or average, which, after all, represents the characteristics that are "typical," deviation from which makes the deviate non-typical. The same person may be abnormally small or abnormally large, abnormally wise or abnormally foolish, depending on whether the comparison be made with a Brobdingnagian or a Lilliputian.

In order to maintain oneself in modern society, it is only necessary to conform to the average in those qualities, physical and mental, which characterize the vast mass of the population. Possession of powers which are useful in the race of life in excess of the average represents additional capital with which, if properly utilized, the individual can secure for himself advantages superior to those enjoyed by the average of the population. Possession of powers of this kind in quantity less than that possessed by the average of the population means a handicap, which, if not compensated for by unusual gifts of another type, or by education, or by the choice of an occupation in which the missing abilities play the least possible rôle, will deprive the person of the degree of self-support attainable for the average of the group.

The non-typical child—When shall we regard a child as educationally exceptional? Borrowing the phraseology of a statute of the State of Connecticut, an exceptional

school-child is "one whose mental or physical personality deviates so markedly from the average standard as to cause a special status to arise with respect to his educational treatment and outlook."¹

This is a rough but entirely adequate description of the child whose education forms the problem of this volume. Many attempts have been made at the definition of the unusual child, but the very safest procedure is to bear in mind the fact that there is no object in making definitions *per se*, that classifications are made for definite purposes, and may therefore vary as these purposes vary. For the shoe clerk, to take a homely example, most of the pupils of a school for the totally deaf are quite likely to be normal, and some of the children in the typical school, the reverse. He would have to reclassify the population from his point of view. Psychologists, sociologists, physicians, and all other students interested in the development of childhood may make their own classification.

The teacher needs neither intricate theory nor fine discrimination in this matter. *All children are typical who can be reasonably well taught with the group, even in cases where supplementary provisions are occasionally necessary to help them to keep up, or where frequent reclassification is necessary in order to relocate them in more appropriate groups.* The child of defective vision or hearing who must be seated close to the blackboard or to the teacher, the crippled child who must be assisted to get to school but is susceptible of ordinary treatment when he gets there, the undernourished child who needs milk, the immigrant child who suffers temporarily from

¹ Taken from Gesell. See bibliography at end of chapter.

a language handicap—these are, from the pragmatic point of view of the school, typical children. They require special attention, not because of their peculiarities, but because of our system of simultaneous instruction. The special provisions do not exist because these children need a totally different kind of education but because they need assistance in holding their own with the group.

Those children are exceptional who, on account of psychological and social considerations, ought not, or in spite of supplementary assistance cannot, be educated along with the typical group. The totally blind child can under no circumstances use the book which forms the medium of instruction, and the totally deaf child is at a disadvantage of like importance. The extraordinarily well endowed child should not be deprived of the opportunity and stimulus to develop to his highest capacity. These children must be educated in an entirely different manner, one adapted to their varying handicaps or advantages.

III. The Problem of the Public School Defined

There are many kinds of deviation from normal or average among children. There are, for example, the neurotic, neurasthenic, and psychopathic children; feeble-minded children; highly endowed children. On the physical side we find the blind, deaf, deformed, crippled, paralytic, and epileptic children. There are, too, children physically below par, as, for example the tubercular and anemic, and the class now commonly referred to as cardiac. Finally, there are a number of types recognized as temperamentally different, a class which in general includes a number of antisocial deviates.

Which of these children properly belong within the scope and responsibility of the public school? It would seem advisable to set down, if possible, general principles for inclusion or exclusion which may guide the school in the recognition of those children who are properly entitled to demand and to receive special educational provision adapted to their case. An effort to establish such principles will be made, and, following that, an attempt to enumerate the children who actually belong in the public school.

Basic principles for determining the public school types—1. Minor deviations of many sorts, though discernible by the teacher and measurable by the physician, the psychologist, or the social worker, are not in fact classifiable as educationally exceptional, so long as these children can by some resiliency be carried along and instructed with the main group. Fine distinctions are not practicable. From the point of view of the school, the average group is much larger than it is from the point of view of the psychologist; from the point of view of the school, the average group is much larger than it is from the point of view of the physician, the surgeon, the oculist, or the aurist. Those children are unusual who require actual differentiation of the educational process. The average group includes all who can somehow travel the regular path, even though some may need more time or special assistance, and others may find the work too meager or too slow. The main group includes those who must have more nourishment, less exercise, or a position nearer the blackboard and the teacher.

2. Many children are physically but not educationally exceptional. They require special care, but not differen-

tiated education. Children who have heart-trouble, or are anemic, tubercular, undernourished, and generally below par, present a school but not an instructional problem. They need attention, but not special education. The remedies in these cases restore the children to the typical group. Even where no permanent remedy can be effected, the educational treatment is not varied. Children in Eskimo garb on a school roof receive the same type of instruction—if not the same quantity—as their more hardy fellows.

3. Temporary retardation, primarily attributable to circumstances rather than to an inherent characteristic of the child, does not place children in the exceptional class. The children of immigrant parents, the children retarded because of illness or transfer, represent a temporary disadvantage. They are typical children who, given a little extra care to enable them to overcome their deficiencies, are soon restored to the large group. They are not inherently different. They do not represent a special educational problem; and that is the only ultimately worth-while test.

4. The American public school is engaged in the business of training the self-supporting members of the community, the productive citizenry of the future. The child of whom it may be stated that he will never be self-supporting in whole or in part on an independent basis, does not represent a problem of the public school. The child whose ultimate destination is an institution, does not belong in the public school to-day.

5. Neither the insane nor the feeble-minded belong in the public school. For the former the school is not pre-

pared; for the latter it should not be asked to provide. It is true that many cities maintain special schools for the definitely feeble, but a defense of this expenditure of funds would be difficult to maintain. To a large extent these cities, as in the case of the smaller systems which almost universally number the feeble-minded among their so-called atypical or dull children, maintain these facilities because the state institutions specially established for the feeble-minded are taxed to capacity. The cities undertake this work perforce because the institutions of practically every state in the Union have "waiting lists."

6. Epileptics, like the feeble-minded, are properly institution cases. No person belongs in the public schools who by virtue of his handicap is really an institution case. The city schools are educating the future self-supporting citizens of the commonwealths.

7. This consideration, if correct, will exclude, finally, children who suffer from a combination of handicaps, as, for example, the deaf-blind, any one of which might be compensated by special education but which, taken together, make it dubious whether the individual can ever be placed on a self-supporting basis.

We have now delimited our field. Those children are problems of the elementary school and candidates for differentiated education who belong to the large group of potentially self-supporting citizens and who, by virtue of a handicap, cannot, or because of extraordinary endowment should not, be educated with the great group of typical children. How many types of these children are there? Can they be classified?

IV. Classification of Exceptional Children

Because children are exceptional it does not follow that they cannot be taught in groups. On the contrary, they must be so taught, in the first place for practical reasons of economy, and in the second place for those educational reasons which find special values in group instruction. We come, then, to the problem of classification of unusual children into groups for purposes of instruction. The following grouping is proposed in the belief that it will be found practical.

Children who are unusual, by the definitions outlined above, are uneducable with the group for reasons that are primarily mental, temperamental, or physical. In a being whose organization is so complex as that of the human infant, causes are perhaps rarely single, and so it is well to emphasize the fact that the distinguishing characteristic is referred to as the primary, the most obvious, the most marked variation. Under each of these three divisions there are subtypes to be noted, and a complete classification for our purposes may be tabulated as follows:

- I. Children who are exceptional for reasons primarily mental.
 1. The most highly endowed group.
 2. The most poorly endowed (but not feeble) group.
- II. Children who are exceptional for reasons primarily temperamental.
 3. Incurrigibles and truants.
 4. Speech defectives.

- III. Children who are exceptional for reasons primarily physical.
5. The deaf.
 6. The blind.
 7. The crippled.

In our discussion in the preceding section, aiming at a determination of basic principles for discovering the public school types, we outlined what proved to be seven reasons for exclusion. The reader may well ask for a supporting argument in the case of the inclusions enumerated in this classification. It may seem to him like begging the question to assume that the totally blind and deaf are non-institution cases, or to classify the truant and incorrigible under the heading which indicates that the explanation of their difficulty lies in peculiarity of temperament.

Explanations and reasons are indeed in order, but further consideration of these problems at this point would trespass on the specific discussions concerning the seven types of exceptional children enumerated above as belonging in the public school. The effort to convince the student of the correctness of this enumeration and classification represents the theme of the remaining chapters of this volume.

V. A Theory for Special Education

Absence of established practice—There is as yet no consensus of opinion in America in the matter either of the types of exceptional children for whom provision should be made or of a basic theory for their education. In the field of mentally exceptional children, for example,

in which we recognize the highly endowed and the very dull, two students have recently given expression to this absence of basic theory.

Speaking of the necessary differentiations, particularly with reference to the needs of the highly endowed, Terman says: ² "The working out of such courses is, indeed, one of the most urgent needs in education to-day. It is easy enough to say that courses for the bright and gifted should be 'enriched' and that those for slow pupils should be reduced to 'minimum essentials.'" And Doll, speaking of education at the other extreme of intelligence status, remarks: ³ "Nothing is so much needed in special classes of to-day as constructive thinking, leading toward the development of satisfactory courses of study. We are all dissatisfied with the present courses."

In the fields of temperamental and physical deviation, theory and practice are no more firmly established than has been shown to be the case in the field of intelligence differences. In a study made by the writer of the educational status of the five groups of children above enumerated under the general headings "Exceptional for Causes Temperamental and Physical," covering the sixty-eight American cities which have a population of one hundred thousand or over, there was found a degree of variation in practice ranging from no special provision for any of these classes to provision for all five. Yet it is evident that this class of cities, taken as a whole, probably represents more special educational opportunities than any other possible grouping to represent a similar proportion of the population of the United States.

² In his *Intelligence Tests and School Reorganization*. See bibliography at end of Chapter IV.

³ In *Journal of Educational Research*, Vol. VIII. p. 31.

An explanation of the wide divergence in practice is probably not to be found in any one circumstance or set of circumstances. Local non-city institutions in some instances seem to make participation in the educational care of certain classes of children on the part of city schools unnecessary. Many other reasons of policy, resources, local conditions, and differing concepts of the function of the public school would be found in part to explain the situation.

It is not possible to generalize even on the basis of population, for, while it is true that all of the twenty-one cities in which none of these activities are carried on fall within a group whose population is less than three hundred thousand, we should have to group the larger cities so as to include all above a population of four hundred thousand to find all of the cities which engage in every one of the types studied. Within this group, too, would be found a city, Washington, which carries on only one of the types of special education studied, whereas the city of Spokane, less than one-fourth the size of Washington, carries on work in two types.

One generalization, however, may safely be made. Where so great a divergence of practice exists, there must be uncertainty as to the propriety of carrying on these special activities, as to whether the time to initiate them is at hand, and as to what the proper procedure in the matter may be.

Some general principles for differentiated education—An examination of the types of exceptional children listed in the foregoing section will make it clear that in this field we must in the main deal with seven sets of specific principles, theory, and procedure, specially ap-

plicable to each case of deviation. Yet it is not impossible to point out a number of considerations which have general applicability, and which, if agreed upon and adopted, may on occasion be appealed to for direction in the solution of problems as they arise in the education of a particular type, or assist in the choice of a particular method, curriculum element, or form of organization. Not infrequently a basic principle applicable to special education as a whole may assist in making a choice between two alternatives.

Special education, then, is necessitated by the existence of two kinds of actuality: (1) a decided and measurable excess of ability which in the present state of educational and psychological science must be limited to the excess represented by general intelligence; and (2) a permanent or temporary handicap, represented by less ability than the average, or by temperamental organization harmfully different from type.

As regards the first of these facts, an excess of intelligence, the inference would seem obvious, although considerable space will be devoted to a discussion, in a future chapter, of this fascinating problem of the special education of the highly endowed. Failure to use this social asset represented by high endowment means a waste of that which we as a society can least afford to lose. Conservation of this most precious of our resources would seem to be clearly indicated.

When we come to the groups who have less or different potentiality than that represented by the wholly typical, we face a problem of minimizing handicaps and developing compensating abilities by educational means. Any person who deviates from the group, even if the deviation

be so small a matter as left-handedness, learns in due course that his deviation represents a handicap. The left-handed person soon learns that daily life is organized with a view to right-handedness. Life is, in fact, organized in terms of the completely typical. Since we cannot reorganize our mode of social intercourse to suit the particular physical or mental constitutions of the varying physical and mental deviations, the fundamental principle applicable to every type of deviation must be the effort to minimize the handicap.

The social psychologists pointed out long ago that deviation from the group means pain and suffering. The minimizing of deviation, therefore, to the lowest possible degree, while preserving to the greatest possible extent the development of all the potentialities for rich, fruitful, happy, and profitable living,—this is the problem of the education of the unusual child. We have said that persons who differ from the group in some way should be given opportunity for education to the utmost of their powers. *It is probably more accurate to say that the guiding motive in the education of these classes should be the reduction of the handicap to the lowest possible minimum.* The development of compensating abilities, such, for example, as lip reading and speech for the deaf, may tend to this very purpose of reducing the handicap.

VI. Summary

The compulsory laws bring to school all the children, including some hitherto neglected in the historic past because of the general neglect of such classes and failure to comprehend their potentialities, and in the immediate past because of the struggle to establish educational facil-

ities for the masses of typical children. Democratic ideals demand equality of opportunity for all. Social economy demands the reduction of dependent classes to the lowest possible minimum, and the conservation of the excess intelligence of the most highly endowed.

The method of simultaneous instruction, even when supplemented by numerous devices which help to keep many partially non-typical children with the group, makes it impossible to educate with the mass, children of certain marked abnormalities, and makes it unprofitable to hold with the average, those capable of far greater achievement. This presents the problem of special education.

A non-typical child, from our point of view, is a child who cannot by any device, or who should not on grounds of social policy, be subjected to the typical procedure. Hence we exclude from this class many children hitherto included either because their deviation is temporary, such as retardation by reason of illness, transfer, or language handicap, and many whose deviation, while permanent, can be made up by devices such as slowing up the pace or lowering the requirements.

For the really and permanently handicapped who require differentiated education, the theory is laid down that the basic principle guiding their education should be the endeavor to minimize and compensate the handicap, and, further, to educate for types of activity where it matters least.

The following classification is suggested:

I. Mental deviation.

- (1) The most highly endowed.
- (2) The dullest of the normal group.

II. Temperamental deviation.

(3) Incurrigibles.

(4) Speech defectives.

III. Physical deviation.

(5) Blind.

(6) Deaf.

(7) Crippled.

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CHAPTER II

THE EXCEPTIONAL CHILD IN THE AMERICAN CITY SCHOOL

I. The Highly Endowed and the Dull

It is probable that dull children, because of the impossibility of escaping the problem which they present, and because of the damage which they cause when not segregated, are now especially provided for in many of the school systems of the United States. This is not to say that we have arrived at finalities in the matter of a basic theory as to their education, for it is true, as Doll says,¹ that "we are all dissatisfied with the present courses. We see their futility both as educational devices and as training for earning a livelihood."

The special education of the highly endowed is in a far less advanced state than that of the dull and feeble, partly because these children do not force themselves as a problem on the consciousness of the teacher and the school administrator. They, when one thinks in terms of present standards of achievement, seem amply able to take care of themselves; and many persons think only in terms of present educational objectives. Such persons seem surprised to learn that there are those who consider that the possession of very high endowment presents an educational problem. These persons feel certain that the bright children will look after themselves.

Special provision for these children will doubtless have to be preceded by years of argument, persuasion, and dis-

¹ In article referred to in the last chapter.

cussion. It is still true that "there is little evidence of any attempt to determine the special aptitudes and gifts of strong students and to provide them with special training in these fields";² and that "the organization of the work, particularly the adaptation of the curriculum to the bright pupils, is in a stage of great uncertainty."³

Special provision for the education of the highly endowed must be preceded by the adoption of reasonable principles of selection and classification, as well as by a theory for the education of the children thus selected. Toward the first of these essential conditions an advance has been made, although some of those most in earnest in this effort seem to consider mere classification as the principal goal. The fact of the matter is that, as the reviewer of a recent book in this field puts the matter,⁴ "at the present time the interest of the schools is centered primarily around the problem of classification of pupils into more homogeneous groups. While this is a very important step of procedure, it alone does not solve the problem of fitting the school to the capacity of the child. . . . If reorganization on the basis of mental capacity is not followed by a genuine modification of curriculum, of methods, and of standards of work, there is little reason to believe that it will represent more than a hollow formula."

When we come to the second of the conditions mentioned, the need for basic educational principles especially applicable to the highly endowed, Terman indicates our

² See E. L. Woods, "Provisions for the Gifted Child," *Educational Administration and Supervision*, Vol. III, p. 139.

³ F. N. Freeman, "Provisions in the Elementary School for Superior Children," *Elementary School Journal*, Vol. XXI, p. 117.

⁴ See *Elementary School Journal*, Vol. XXIII, p. 148.

present poverty quite clearly when he says ⁵ that "a book dealing sagaciously with this problem would merit and would doubtless have wide popularity and profound influence."

II. The Other Five Groups of Exceptional Children

When we come to an examination of the present status in American schools of the other five types of exceptional children with whom we are concerned in this volume, the incorrigible, speech defective, blind, deaf, and crippled, we find confusion worse confounded. There is lack of agreement on the question whether any particular type of work should be undertaken. The degree of variation in practice indicates an almost total absence of underlying educational philosophy in the matter of the education of any group of these children.

Of the sixty-eight American cities having a population of more than one hundred thousand, where conditions as to these five types were studied by the author for purposes of this volume, twenty-one make no special provision for these children at all, while five cities provide special educational opportunities for all of the types. In-between we find cities making provision for one, two, three, or four of the types, but practically no agreement as to which group of children present the most pressing need when not all of them can be provided for. Many cities which, for example, provide for only two types, seem to make their selection at random, for they do not agree as to types selected with other cities providing for the same number of exceptional groups. The facts are set forth in detail in the tables which follow.

⁵ In his *Intelligence Tests and School Reorganization*.

An examination of Table I will show all of the sixty-eight American cities having a population of more than one hundred thousand, ranked in the order of size, and indicating the number and kind of special educational activities carried on in each instance.

TABLE I

AMERICAN CITIES WITH A POPULATION OF ONE HUNDRED THOUSAND OR OVER, AND THE SPECIAL EDUCATIONAL ACTIVITIES CARRIED ON BY EACH

<i>Rank in Size</i>	<i>Name of City</i>	<i>Population</i>	<i>Incor- rigibles</i>	<i>Speech Defec- tives</i>	<i>Deaf</i>	<i>Blind</i>	<i>Crippled</i>
1	New York	5,620,048	x	x	x	x	x
2	Chicago	2,701,705	x	x	x	x	x
3	Philadelphia	1,823,779	x	x	x	—	x
4	Detroit	993,678	x	x	x	x	x
5	Cleveland	796,841	x	x	x	x	x
6	St. Louis	772,897	x	x	x	—	—
7	Boston	748,060	x	x	x	—	—
8	Baltimore	733,820	x	—	x	—	x
9	Pittsburg	588,343	—	x	—	—	x
10	Los Angeles	576,673	x	x	x	x	—
11	Buffalo	506,775	x	x	x	x	—
12	San Francisco	506,676	x	x	x	—	—
13	Milwaukee	457,147	—	x	x	x	—
14	Washington	437,571	x	—	—	—	—
15	Newark	414,524	x	x	x	x	x
16	Cincinnati	401,247	x	x	—	x	x
17	New Orleans	387,219	—	x	x	—	—
18	Minneapolis	380,582	—	x	x	—	x
19	Kansas City, Mo..	324,410	x	—	x	—	—
20	Seattle	315,312	x	x	x	x	—
21	Indianapolis	314,194	x	—	—	—	—
22	Jersey City	298,103	—	—	—	—	—
23	Rochester	295,750	x	x	—	—	x
24	Portland, Ore. ...	258,288	—	—	x	—	—
25	Denver	256,491	—	x	—	—	—
26	Toledo	243,164	—	—	x	x	x
27	Providence	237,595	x	—	—	—	—
28	Columbus	237,031	x	—	—	—	—
29	Louisville	234,891	x	—	—	—	—
30	St. Paul	234,698	—	x	x	x	—
31	Oakland	216,261	—	—	x	—	—
32	Akron	208,435	x	—	x	—	x
33	Atlanta	200,616	x	—	x	—	—

AMERICAN CITIES WITH A POPULATION OF ONE HUNDRED THOUSAND OR
OVER, AND THE SPECIAL EDUCATIONAL ACTIVITIES CARRIED
ON BY EACH—*Continued*

<i>Rank in Size</i>	<i>Name of City</i>	<i>Population</i>	<i>Incor- rigibles</i>	<i>Speech Defec- tives</i>	<i>Deaf</i>	<i>Blind</i>	<i>Crippled</i>
34	Omaha	191,606	—	—	—	—	—
35	Worcester	179,754	—	—	—	—	—
36	Birmingham	178,806	—	—	—	—	—
37	Syracuse	171,717	—	—	x	—	—
38	Richmond	171,667	x	—	—	—	—
39	New Haven	162,537	x	—	—	—	—
40	Memphis	162,351	—	—	—	—	—
41	San Antonio	161,379	—	—	—	—	—
42	Dallas	158,976	—	—	x	—	—
43	Dayton	152,559	x	—	x	—	x
44	Bridgeport	143,555	—	—	—	—	—
45	Houston	138,276	—	—	x	—	—
46	Hartford	138,036	—	—	—	—	—
47	Scranton	137,783	—	—	—	—	—
48	Grand Rapids	137,634	x	x	x	—	—
49	Paterson	135,875	x	—	—	—	—
50	Youngstown	132,358	—	—	—	—	—
51	Springfield, Mass..	129,614	—	—	—	—	—
52	Des Moines	126,468	—	—	x	—	—
53	New Bedford	121,217	—	—	—	—	—
54	Fall River	120,485	—	x	—	—	—
55	Trenton	119,289	—	—	—	—	—
56	Nashville	118,342	—	—	—	—	—
57	Salt Lake City....	118,110	—	—	—	—	—
58	Camden	116,309	—	—	—	—	—
59	Norfolk	115,777	—	—	—	—	—
60	Albany	113,544	x	—	—	—	—
61	Lowell	112,759	—	—	—	—	—
62	Wilmington	110,168	—	—	—	—	—
63	Cambridge	109,694	—	x	—	—	—
64	Reading	107,784	—	x	—	—	—
65	Fort Worth	106,482	—	—	—	—	—
66	Spokane	104,437	x	—	x	—	—
67	Kansas City, Kan.	101,177	—	—	x	—	—
68	Yonkers	100,176	—	—	—	—	—
Total population		27,429,520	30	24	31	12	14

It will be noted that within this class of cities, which, taken as a whole, probably represent more special educational work than any other possible grouping to rep-

TABLE II
THE NUMBER OF SPECIAL TYPES FOR WHOM EDUCATIONAL PROVISION IS MADE IN THE VARIOUS CITIES

<i>No special provision</i>	<i>One type</i>	<i>Two types</i>	<i>Three types</i>	<i>Four types</i>	<i>Five types</i>
Jersey City	Washington	Pittsburg	St. Louis	Philadelphia	New York
Omaha	Indianapolis	New Orleans	Boston	Los Angeles	Chicago
Worcester	Portland	Kansas City, Mo.	Baltimore	Buffalo	Detroit
Birmingham	Denver	Atlanta	San Francisco	Cincinnati	Cleveland
Memphis	Providence	Spokane	Milwaukee	Seattle	Newark
San Antonio	Columbus		Minneapolis		
Bridgeport	Louisville		Rochester		
Hartford	Oakland		Toledo		
Scranton	Syracuse		St. Paul		
Youngstown	Richmond		Akron		
Springfield	New Haven		Dayton		
New Bedford	Dallas		Grand Rapids		
Trenton	Houston				
Nashville	Paterson				
Salt Lake City	Des Moines				
Camden	Fall River				
Norfolk	Albany				
Lowell	Cambridge				
Wilmington	Reading				
Fort Worth	Kansas City, Kan.				
Yonkers					
21	20	5	12	5	5-68

SECTION B

	<i>Incorrigible</i>	<i>Blind</i>	<i>Crippled</i>	<i>Speech defective</i>	<i>Deaf</i>
Provision actually made for a population group of	14,760,733	13,261,812	15,254,475	18,866,823	20,512,852
Rest of population in this study for whom no provision exists.....	12,668,787	14,167,708	12,175,045	8,562,697	6,916,668
Population of continental United States not included in this group for whom probably very little opportunity for special education is found ¹	78,281,100	78,281,100	78,281,100	78,281,100	78,281,100
Total population of continental United States	105,710,620	105,710,620	105,710,620	105,710,620	105,710,620

¹ Except for the deaf. See Chap. XI.

resent a similar proportion of the population of the United States, there is found a degree of variation in practice ranging from no special provision for any of these classes to provision for all five. These facts are indicated more clearly by a summary of the situation in Table II. (See page 29.)

For purposes of noting the real extent of work in these special fields, a restatement of the facts is made in Table III. Here the student will find a statement of the cities engaged in each type of activity, a statement of the total population within the group of cities carrying on each of the special educational activities here studied, and, by deducting this number from the total population of the sixty-eight cities studied, a statement of the population group for whose children these educational facilities are not available. If the cities engaged in carrying on the various activities are engaged in valuable work that may be properly expected of the public day schools, then in every instance a much greater population in the United States is without important and necessary educational facilities. (See pages 30 and 31.)

III. The Problem of Administration

There is one problem common to all the types of special education to be considered, which may therefore be discussed in a general chapter that concerns them all: namely, the problem of general supervision and control. Where the system is so small that the superintendent does not have at the central office executive assistants definitely detailed for organization as distinguished from curriculum supervision, the question naturally does not arise. In such a system any special school or class estab-

lished would be responsible directly to the superintendent. Where, however, the headquarters staff consists of a number of persons engaged in assisting the superintendent in the executive work of organization and administration, a number of possible methods of control of special education is conceivable and actually found in use:

1. The schools may be entirely independent, unrelated to one another, and responsible to the superintendent direct either through the principal where there is one school of each type or through a supervisor of this one kind of special work where there are several schools, the status being coördinate with that of any other officer who has direct responsibility, as, for example, the director of health or recreation.

2. The schools may be responsible to assistant superintendents on a geographical basis, each being responsible to that assistant who happens to be in general charge of the district where it is located.

3. The schools may all be in charge of an assistant superintendent designated to supervise this work along with other duties.

4. Finally, the schools may be under the supervision of a special supervisor or director of special education appointed exclusively for this work.

Of the twenty-two cities which maintain three or more of the special types of education studied in this volume, all of these types are found, as noted below:

1 and 2—These activities are responsible directly to the superintendent or to an assistant superintendent on a district basis in the cities of Detroit, Cincinnati, Seattle, San Francisco, Minneapolis, Kansas City, Mo., Toledo, Akron, Dayton, Grand Rapids, St. Paul.

3—These activities are centralized in the hands of an assistant superintendent, who possibly has other work besides, in the cities of: New York, Boston.

4—These activities are in charge of a director of special education or schools in: Chicago, Los Angeles, Buffalo, Newark, Philadelphia, Milwaukee, Rochester.

5—A combination of both types of organization, some forms of special work responsible directly to superintendent or assistant superintendent and some to a supervisor of several types of special education, is found in the cities of Cleveland, St. Louis and Baltimore.

Which is the most useful type of central supervision? To the writer it would seem that there are certain problems of special education that are not specific problems applicable to a particular type of defective and to procedure for his benefit, but rather problems applicable to the group as a whole, which must be faced by the superintendent and his board. Principals and workers in the several special fields who object to the centralization of special education in the hands of a general supervisor of that work, on the ground that they face questions particularly within their fields of which such a supervisor cannot be cognizant since he obviously cannot be expert in all forms of education, overlook the fact that such supervision exists at any rate and always, as the superintendent invariably stands between them and the board.

The question is not one of supervision as against no supervision, but rather one of gathering all the interests of special education as one headquarters problem receiving constant attention as such, in place of scattering interest in the various types. There are central office problems of special education such as budget statistics,

the location of schools or centers, the advisability of engaging in any particular type of work, the appointment of teachers, and others of a like kind. It is possible, too, to economize funds and coördinate work by having for the common service of all of these schools, central office psychological, clinical, testing, research, and other services. Frequently, too, equipment combinations may be effected and buildings erected to be used for several types of the work.

Of the several types considered, the most efficient would seem to be that employed in the five large cities which centralize the headquarters interests of non-typical children in a supervisor of special education. In addition to the special educational types here studied, this supervisor would also be in charge of special facilities for the dull, open-air schools, special facilities for immigrant children and other temporarily handicapped pupils, as well as, it is to be hoped, the special educational opportunities desirable for the highly endowed. Such an officer, seconded by a corps of experts in the various fields and a headquarters staff for general work, would seem best calculated effectively to secure consideration for the children whose opportunities are in question from the superintendent and board, and to organize the facilities required, in the best possible manner.

IV. Summary

The present chapter deals particularly with the special educational provisions found in American city schools for incorrigibles, speech defectives, the deaf, the blind, and the crippled.

In the sixty-eight American cities having a popula-

tion of one hundred thousand or over, twenty-one cities offer no special work of the type here studied, twenty cities offer one of these types of work, five cities offer two types, twelve cities offer three types, five cities offer four types, and five cities offer all five types of work. Grouping the cities which offer one or more types of opportunity in accordance with the classes of children dealt with, we find that thirty cities have special facilities for dealing with incorrigibles, twelve cities offer special education for the blind, fourteen cities have special arrangements for crippled children, twenty-four cities undertake work to correct speech defectives, and thirty-one cities have special schools and classes for the deaf.

Of the various possible types of organization of special education in the city schools, it would seem that placing the work in charge of a director of special education would be conducive to producing the best results.

Bibliography

For the present status of any of these classes in the American public schools, see references at the end of the chapters dealing with the particular groups.

PART II

**THE EDUCATION OF MENTALLY
EXCEPTIONAL CHILDREN**

CHAPTER III

HOW CHILDREN DIFFER IN INTELLIGENCE

I. Measuring Innate Capacity

What is normal intelligence? A clear-cut comprehension of the answer to this question is the key without which no one may enter that many-sided edifice which to-day stands at the center of all educational discussion,—the intelligence testing movement. No matter where one begins in contemporary discussion, what phase or problem of education one is interested in, eventually one must take into account the factor of variability in intelligence.

The question with which the preceding paragraph opened did not ask what intelligence is. That is a problem regarding whose solution the psychologists have not yet reached agreement. For the present we are measuring a function as it is observable in conduct, and measuring it with more than a reasonable degree of success, without attempting either to define or to analyze it into its constituent elements.

A useful way in which to think of the characteristic that is being subjected to measurement is to regard it as inherited potentiality or capacity to do and think and be that which men do and think and are. At the basis of the movement is the fact that we are measuring an innate inherited capacity, possessed at birth, and essentially unaffected by education or environment. From

this point of view, *individuals do not become and cannot be made to become more intelligent.*

It is of course true that in the lives of some individuals potentialities become developed to the highest possible degree, while in others they remain dormant. Again, it is true that equal potentialities equally well developed may function differently because of a thousand additional factors such as health, temperament, ideals, and even accident. But the fact remains that the present movement undertakes to measure intelligence purely, unaffected by education and environment—naked capacity. Ideally, two individuals possessed of the same degree of intelligence will, by test, secure the same numerical index, though one may be well, the other not at all, educated. The effort is made to measure that innate difference which every one has always known to exist.

The question with which this chapter opens does not ask how many types of intelligence there are, and how these differ one from the other. Every one knows that people differ in quality as well as in quantity of intelligence. But the present status of the psychology of individual differences does not enable us to make either distinction or prognosis regarding the type of intelligence or mind that is being measured. We cannot tell which of the children being tested will be the butcher, baker, or candlestick maker; the doctor, lawyer, merchant, chief.

We are, then, measuring a function which we can neither define nor refine. Our measure is at present crude, denoting quantity without distinguishing between qualities. It has, however, proved to be extraordinarily useful and even in its crude status has raised for the educator inescapable problems whose solution will open wide

vistas demanding a reconstruction of all of our educational thinking and organization.

What is normal intelligence?—What, then, is normal intelligence? It is the possession from birth of the normal quantity of potentiality, capacity, aptitude, to function in our society. But what constitutes this normal quantity? The reader may best approach an answer to this question by asking himself what he means when he uses the expression “average height,” “average size,” “moderate circumstances,” “the happy medium.” That is normal which, in respect to any given quality, designates most of us. Normal, when we are thinking in quantitative terms, is much the same as average, although perhaps a more refined or more true average than the arithmetical average of our school-days.

In measuring anything which comes into being and exists independent of our ability to shape or alter it, as we do with articles which we manufacture, the norm or criterion by means of which we judge is inherent and not subject to our arbitrary determination. In arriving, for example, at the average height or size of foot of a selected group of people, there is only one possible method of approach, i. e., the measurement of the height or the size of the foot of the entire group. This is the way in which we have secured norms for the measurement of intelligence. The underlying assumption is that the great majority of us are normal, that we in fact constitute the norm. Regardless of how we might appear to the inhabitants of other planets or to utopian dreamers in this one, we can be measured only in our own terms.

The first as well as the basic concept of the modern intelligence movement, formulated by Alfred Binet, to

whom psychology and education must forever remain indebted, is the simple one that most children of any given age will possess the intelligence that belongs to that age. In other words, in any large group of six-year-old children, most of them will possess six-year-old intelligence. The same would, of course, apply to any other age until we reach maturity, when full growth has been reached and after which no further increment to capacity takes place.

The meaning of mental age—We have now introduced the reader to the concept of “mental age,” simple when clearly grasped, yet constituting without doubt one of the most brilliant contributions of modern science. Alfred Binet, whatever the historians may find regarding predecessors—and few contributors to knowledge have been absolutely free from the influence of predecessors—first clearly formulated the concept and the possibility of thinking of intelligence quantitatively. He provided a means for actually designating intelligence in measurable terms, in fact, in plain numbers, indicating attained age of intelligence development.

To restate the matter simply: in the case of most people, mental development keeps pace with physical development up to the point of maturation. Most people, therefore, at any given chronological age, are of the corresponding mental age. At chronological age four, in accordance with this hypothesis of Binet, most children are mentally four years old.

On the other hand, some children have more than average capacity. These children will at chronological age four be more than four years old mentally. Conversely, some children have less than average capacity. Those

children will at chronological age four be less than four years old mentally.

The meaning of brightness and dullness—We have now a concept of more than mere normality. Not only is it true that children whose chronological and mental ages are in agreement are normal; it is equally true that children who at a given chronological age have a considerably greater mental age are bright, and that children who at a given chronological age have a considerably lesser mental age, are dull. We have referred to this formulation by Binet as a hypothesis. But, with the assistance of his co-worker, Simon, he devised a method of testing and standardizing it to a high degree of perfection, whereby he was, and we to an even greater degree are, able to determine the mental age of children.

The detailed history of the development of intelligence testing since Binet has been written and will not be repeated here. Our aim has been to acquaint the reader with the concept of mental age as basic to an understanding of intelligence measurement, and more particularly to an understanding of the meaning, in technical terms, of brightness and dullness. We must now proceed to an explanation of the next step in the development of this movement toward practical usefulness, the formulation of the intelligence quotient.

The significance and use of the intelligence quotient—Mental age, while it designates an absolute fact regarding the intelligence status of an individual, is not a sufficient index of brightness. Mental age eight, for example, may indicate very high intelligence in the case of a child whose chronological age is six, average intelligence in the case of a child whose chronological age is eight,

and feeble-mindedness in the case of a person whose chronological age is twenty.

From the practical point of view, then, mental age as a measure of brightness or intelligence status is significant only in relation to chronological age. But a mere statement of number of years accelerated or retarded is not a very much better index. The highly endowed child referred to above, for example, who is accelerated two years, was in all probability mental age four at the time that he was chronologically three years old, and therefore just one year accelerated at that time. The value of the number of years of retardation or acceleration differs at various ages. A year of retardation at chronological age sixteen is of negligible significance, leaving the child well within any quantitative definition of average intelligence. But the same amount of retardation at age two indicates definite feeble-mindedness of the type known as low-grade moron.

It will be seen further, from the foregoing, that mental age is not useful as a means of classification for purposes of education because, while it might group persons who for the time being are possessed of the same amount of intelligence—and this is decidedly open to question—it certainly would be a means of gathering into the same group all types of intelligence from feebleness to high endowment.

A more useful index of brightness is the ratio which expresses the relation of mental to chronological age, and in that manner indicates the degree of intelligence in numerical terms which make it possible at once to know the intelligence status of the individual and to create homogeneous groups from the point of view of capacity,

regardless of either chronological or mental age possessed at the time the test is made. It is this relationship of mental to chronological age which makes it possible for us to discuss the distribution of intelligence and to organize the school population into homogeneous groups for purposes of instruction.

To find the intelligence quotient, now generally designated as the I. Q., "we simply divide mental age (expressed in years and months) by real age (also expressed in years and months). The process is easier if we express each age in terms of months alone before dividing."¹

There are two assumptions underlying the derivation and the use of the intelligence quotient which will be pointed out but not discussed. The student interested in following the discussion of these matters in detail will find references to the literature in the bibliography at the end of this chapter.

Age 16: Conventional denominator—In the first place, then, the chronological age used in the derivation of the I. Q. increases with the age of the subject tested until the point of sixteen is reached, after which, regardless of the age of the person tested, no higher figure is employed. For purposes of deriving the intelligence quotient, all adults are sixteen years of age. To quote Terman again in explanation:

Native intelligence, in so far as it can be measured by tests now available, appears to improve but little after the age of fifteen or sixteen years. It follows that in calculating the I.Q. of an adult subject, it will be necessary to disregard the years he has lived beyond the point where intelligence attains its

¹ From Terman's *The Measurement of Intelligence*. See bibliography at the end of chapter.

final development. Although the location of this point is not exactly known, it will be sufficiently accurate for our purpose to assume its location at sixteen years.

Constancy of I.Q.—This assumption is not nearly so important for the student of the education of exceptional children as is the second one to be pointed out, i. e., the constancy of the I.Q. It must be clear that all arguments adduced in favor of differentiating education on the basis of intelligence differences and, consequently, on the basis of differences in ultimate behavior, performance, and service, must be grounded on the assumption that the I.Q. is a comparatively permanent index to the intelligence status of children. If it could be considered possible that children might at various stages of development become appreciably more bright or more dull, really lose or gain in intelligence, basic differentiation, such as we propose to contend for, beginning with school entrance, would not be tenable.

We do not propose in this general discussion, devoted primarily to pedagogy rather than to psychology, to enter into the detailed evidence favoring belief in the probable constancy of the I.Q. Suffice it to say that the case for differentiated education here presented is based on the belief of the present writer in the correctness of the conclusions of Profssor Terman² that in mental as in physical endowment one cannot by education, environment, experience, or maturity "add a cubit unto the measure of his stature."

The I.Q. has been found in the large majority of cases to remain fairly constant, at least for the ages between three or four and fourteen or fifteen. . . . While the law of constancy

²In his *The Intelligence of School Children*. See bibliography at end of chapter.

is subject to minor revisions, few things are more certain than the essential untruth of the widespread belief that mental development knows no regularity, and that the dullard of to-day becomes the genius of to-morrow. The fact is that . . . the feeble-minded remain feeble-minded, the dull remain dull, the average remain average, and the superior remain superior.

The test an imperfect instrument—The apparent simplicity both of the content and the administration of the test makes him who is first introduced to this incalculably important contribution of modern applied psychology hesitate to admit the possibility of the high degree of accuracy of diagnosis and prediction that can be based upon it. Something in human nature, doubtless a noble impulse of altruism, makes one resent its inevitability to the point where he attributes to the psychologist rather than to nature the decree that “the feeble-minded remain feeble-minded, the dull remain dull, the average remain average.” But the practical educator who has used the test over a period of years and has observed the fulfilment of the predictions made on the basis of it finds it difficult to become exercised over the attacks occasionally made on the intelligence testing movement.

Intelligence testing, as practised to-day, leaves open a number of possible sources of error. There may in some cases be irregularity of mental development; conditions at time of giving the test, the child's health or comfort, the examiner's personality, may influence the result; there is crudeness in the scale and inaccuracy in its administration. But (1) the testing movement is new and will doubtless improve in accuracy, and (2) children can be retested. Neither the genius nor the moron, if wrongly located, need remain where first placed.

II. How Intelligence Is Distributed

Two types of mental deviation—Before entering upon a discussion of the distribution of intelligence and making suggestions for classification that may follow from these facts, it may be well to glance briefly at a form of deviation from normal which does not concern us. There are two ways of being mentally different from the group, and it will perhaps be useful to look at these as either vertical or horizontal. If we consider intelligence as distributed along a vertical line from genius at the top to idiocy at the bottom, the status of any individual in this series of ranks depending entirely on the quantity of intelligence possessed by him, then horizontal variation in the form of erratic behavior may be said to consist of deviation at any point along the vertical line.

It is as possible for the feeble-minded as it is for the highly endowed to be insane. From this point of view, every intelligence level may be said to have behavior norms of its own. This deviation is made up of various degrees or types which concern the neurologist and psychiatrist but not, as indicated in our first chapter, the educator. Neurotic, neurasthenic, and psychiatric children do not belong in the schools.

We come, then, to the kind of variation which concerns us; namely, the variation along what we have visualized as the vertical or hierarchical line, a purely quantitative differentiation, which implies the possession of a greater or less amount of intelligence. This quantitative variation is commonly referred to as the distribution of intelligence.

It may be noted by the way, and will be referred to at more length in the chapter dealing with the educa-

tion of the highly endowed, that there is no claim that the members of any designated group along this vertical line are really alike in intelligence. The most casual consideration of the subject will indicate that two children each measuring I.Q. 125 may be different, not only in temperament, character, and disposition, but actually in the quality of their intelligence. One may be particularly talented in music and the other potentially great in science. The only claim made is that they are alike in that which we are to-day able to measure, i. e., the quantity of general intelligence possessed by them. The ability to discover qualitative differences of intelligence as between children of the same quantitative rank is one still to be achieved by the differential psychologists.

The meaning of distribution of intelligence—We come, finally, to a consideration of the distribution of intelligence. Distribution is a misleading word. We are not dealing with something outside of us which is distributed and can be acquired. The norms are always set by the group itself. What we really mean is the *possession* of intelligence, although in statistical terminology it seems more convenient to speak of distribution. Ultimately we always mean the classification of the population from highest to lowest, in groups of approximate likeness, with regard to the possession of the characteristic that is being measured.

The actual amount of intelligence possessed, as designated by any given I.Q., may ultimately, on refinement of the instrument, or on the basis of more extensive investigation, prove to have been wrong; but the population will always consist of one hundred per cent, and it will always be possible and safe to speak

of the upper fifteen per cent, the middle seventy per cent, and the lower fifteen per cent. In other words, the student should grasp the fact that no matter how crude our present measure may be, and how refined it may hereafter become, it will always be distributed in a certain symmetrical manner. This one fact having been permanently established, we may, regardless of the present crudeness of our measure, speak with confidence and with a feeling of genuine permanence about the problem of classification of children into homogeneity groups for purposes of education; because we speak in that permanent term, percentage of the population as ranked by any tests that may ever be developed.

The normal frequency curve—One link in the chain of reasoning by which we have arrived at our conclusions is still missing; namely, an explanation of the reason for our certainty that, no matter how refined the test may become, we shall always have groups of upper, middle, and lower intelligence. The student who is interested in the proofs for the validity of the normal curve of distribution will find reference to the literature of statistics at the end of this chapter. The general reader, interested primarily in the educative process, may be satisfied with a bare statement of the facts:

“When many unselected children of a given age are examined for any trait, large individual differences are found.”³ When these differences are measured, whether they be human intelligence, specific mental traits, or anthropometrical measurements, they always with “striking regularity resemble a fairly symmetrical curve. In *all* such distributions, the measures are largely concentrated

³ See last foot-note.

very near the middle of the scale. Furthermore they shade off in both directions from the middle high point—the mode—somewhat symmetrically. . . . Furthermore, in the case of those traits which are more subject to refined measurement,—e. g., heights of men, strength of grip, cephalic index, chest measurement and other physical measurements, and fairly refined psychological measurements, the curves more closely approximate symmetry.”⁴

Since we are dealing with an inherited trait, we must assume that the measurement of intelligence, no matter how refined the instrument may become, will always yield, for any unselected group of sufficient size, a distribution having a tendency to approach ever nearer to the ideal curve of distribution, a distribution “concentrated near a mode about the middle of the range, sloping off quite symmetrically in both directions, and showing relatively few cases at the extreme”—a symmetrical distribution:

In our further discussion regarding classification for purposes of instruction we shall designate intelligence by given I.Q.’s, and speak of the distribution of intelligence in the same terms, because that represents the best measure at present available. But the reader is urged to bear in mind that the classification to be suggested has permanent value because we are at bottom dealing with percentages of the population, and, since the possession of intelligence will always be found to be distributed symmetrically along the ideal curve of frequency, increasing accuracy of the measuring-rod can only make more

⁴H. O. Rugg, *Statistical Methods Applied to Education*, Boston, Houghton Mifflin Co., 1917.

valid and more accurately selected the grouping which we shall propose.

The intelligence of the population—How, then, is intelligence distributed? For purposes of our discussion, we shall assume the accuracy of the distribution found by Terman in the course of the standardization of the Stanford revision of the Binet-Simon tests.

The central group on the remarkably symmetrical curve plotted by Terman, consists of $33\frac{1}{3}$ per cent of the population and ranges in I.Q. from 96 to 105. We have here another way of stating the fact that the person of average and, in that sense, of normal intelligence is he whose chronological and mental ages agree. Naturally such agreement in the most absolute sense will not frequently occur. Where it does, the fact is represented by unity or 1.00. Slight differences are better represented in terms of I.Q. than they would in terms of months. For any practical purpose, it may very well be said that one-third of the population, ranging in I.Q. from four points below to five points above unity, are at age, their chronological and mental age being in agreement.

On either side of this range, 96–105, we find $33\frac{1}{3}$ per cent of the population, ranging from below I.Q. 70 to above I.Q. 130, distributed as follows:

Of the $33\frac{1}{3}$ per cent below I.Q. 96							Of the $33\frac{1}{3}$ per cent above I.Q. 105						
$33\frac{1}{3}$ %	have	an	I.Q.	of	95	or less	$33\frac{1}{3}$ %	have	an	I.Q.	of	106	or more
25	"	"	"	"	92	"	25	"	"	"	"	108	"
20	"	"	"	"	91	"	20	"	"	"	"	110	"
15	"	"	"	"	88	"	15	"	"	"	"	113	"
10	"	"	"	"	85	"	10	"	"	"	"	116	"
5	"	"	"	"	78	"	5	"	"	"	"	122	"
3	"	"	"	"	76	"	3	"	"	"	"	125	"
2	"	"	"	"	73	"	2	"	"	"	"	128	"
1	"	"	"	"	70	"	1	"	"	"	"	130	"

Three questions for discussion—Three practical questions now face us:

- 1—Do these facts demand differentiated education, or can we in the face of this distribution of intelligence be content to continue the unitary system now in effect?
- 2—If we in theory agree on the desirability of inaugurating differentiated education, on what basis shall we classify the children as they enter school?
- 3—Having agreed to differentiated education and having classified the children for that purpose, what shall be the principles on which the reorganized schools shall be conducted?

With the first two of these questions we shall deal in the next chapter. The third we shall endeavor to answer in the three chapters which follow it. Meanwhile we may leave with the reader this corollary of the distribution of intelligence: If it is a fact that children vary in I.Q. all the way from below 70 to more than 130 as has been indicated, then out of every thousand six-year-olds who are sent to school in the fall of every year some are mentally less than 4.2 years old, while others are mentally more than 7.8 years of age, a difference of three and one-half years of development. Is any further explanation needed for the fact that from one fourth to one third of these children find it impossible to do the work of the first grade, while to large numbers of them, the standard set for accomplishment appeals as ridiculous?

III. Summary

We have undertaken in this chapter to introduce the student who has not already familiarized himself with

the intelligence testing movement, to a number of the basic concepts underlying it. Briefly restated, these underlying principles are as follows:

While we undertake to measure it, we do not attempt to define intelligence. The effort made is to measure the amount of innate capacity inherited and possessed. Although it is apparent that a given designation of quantity of intelligence earned by two individuals may not really describe similarity of type of intelligence, we do not at the present time attempt to measure these qualitative differences.

Normal intelligence, from our point of view, is median intelligence, the exact quantitative designation of which is arrived at by statistical methods of investigation with the use of a specially devised measure, which has proved itself useful in discriminating between individuals in respect to the trait which we are measuring. This "normality," or, much better, average intelligence, is expressed by the statement that the chronological and mental ages are in agreement, more accurately and briefly described as the possession by the individual of an intelligence quotient of 100.

But it is setting too fine a measure to demand absolute agreement of the ages and a quotient of 100 before we can describe intelligence as "average." As a matter of fact, the average group consists of persons whose intelligence quotient is somewhat below and somewhat above 100. One third of the population belong within the I.Q. range 96-105. On either side of this group we find one third whose intelligence is better than, and one third whose intelligence is poorer than, the average.

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CHAPTER IV

HOW SHALL THE SCHOOLS BE REORGANIZED?

I. The Reason for Differentiated Education on the Mental Level

Contrast—The instructor of a university class in the education of exceptional children was looking for a child for the purpose of demonstrating the method of intelligence measurement, and accidentally discovered E.¹ This lad, eight years and four months old, proved to be mental age fifteen years and seven months, thus attaining an I.Q. of 187. On investigation it was learned that he was then in the sixth grade, where, the reader will note, children of eleven are typically found.

But this grade location is really no indication of the young man's attainment, for "in addition to his regular school work the child had covered the following special work in languages and mathematics either with a tutor or with his mother: geometry; algebra, as far as equations; Latin, partial knowledge of the four declensions; Greek, worked out the alphabet for himself from an astronomical chart, between the ages of five and six years; French, equal to about two years in the ordinary school; German, ordinary conversation; Spanish, attends classes with his mother—reads and understands; Italian,

¹C. G. Garrison, "Psychology of a Prodigious Child," *Journal of Applied Psychology*, Vol. I, p. 101.

reading knowledge, simple conversation; Portuguese, asked his mother to take the language at the Columbia summer school because he could not be registered himself; Hebrew, a beginning; Anglo-Saxon, a beginning. In astronomy he has worked out all the constellations from MacCready, and displays a very great interest in this subject."

His favorite book at the moment was *Ivanhoe*. Before he was three years old he had read such books as *Peter Rabbit*. In short he was, statistically speaking, the brightest child in more than a million, and "as far removed from the average in the direction of superiority as an idiot stands removed in the direction of inferiority."

By way of contrast, here is the case "of a boy who had never been known to talk either in school or on the playground, although he had been in school for eleven years before being assigned to a class for defectives. The boy apparently wanted very much to talk, but efforts to induce him to do so met with no success. All kinds of strong incentives were used to encourage him to make supreme efforts, with the result that he would finally repeat words of one syllable."²

The first of these children was discovered accidentally, and, the discovery being made and recorded, nothing remains to be done. No American school system to-day is prepared from either the administrative or the theoretical point of view to provide him with really special, differentiated education. The reader will note that in terms of grade location this child was "accelerated." He had

² M. L. Anderson, *Education of Defectives in the Public Schools*, p. 29. See bibliography at end of Chap. VII.

been allowed to skip some grades. That, speaking generally, represents the limit of educational effort to-day as practised in the public schools of America. The second child, on the other hand, was located in a special school, especially built, equipped, and staffed. He was the subject of devoted care, and "all kinds of strong incentives were used to encourage him."

Shall We Continue to Favor the Dull?—Those guardians of our democratic institutions who fear the introduction of frankly differentiated schools because of the inequality which such reorganization threatens to bring about, continually assume that we to-day have a "democratic," unitary, single-type school. But no such condition prevails. As a matter of fact we have differentiated education. We have a double school system. If not always in practice, certainly in theory as something to be desired, we have an undemocratic school system; but the differentiation is all in favor of the dull. The highly endowed are "taking care of themselves."

Will it be possible, in the face of the demonstrable and enormous variation in innate capacity, to continue our one-type system of schools? Is it desirable that we should do so? What is the case for differentiation on the basis of differences in intelligence?

Differentiated education, if established, must deviate from type in two directions, upward and downward. The case for the special education of the defectives has been made—by the defectives themselves. Their inability to do standard work has impressed itself on the educational world. The desirability of segregating them and establishing special work for them even where no such work exists is now taken for granted. Many systems maintain

special schools for them. *We now have a double, not a single, school system.* These children, so far as concerns the establishment of special educational facilities, no longer represent an open problem. Our discussion, so far as they are concerned, will be limited to method, and is reserved for another chapter.

But educational theory and practice to meet the upward deviation from type have not yet been established. We need, but do not now possess either in practice or in theory, these schools. Before taking up method we must, in this instance, make out a case for organization. The remainder of this chapter will be devoted to two problems: we shall first endeavor to formulate the need for the special education of the highly endowed; we shall then endeavor to establish a definite and workable classification of the entire school population for practical purposes of administrative organization.

II. Why Special Education for the Highly Endowed?

The present method of school organization is unreasonable—The present method of school organization employs, for purposes of classification, a most unreliable index—attained age. Children enter school in large numbers once or twice a year at approximately six years of age. At the end of a given period, measured in chronological terms, not in terms of attainment, as many of them as possible are “promoted.” A few that are not promoted present the problem designated as retardation, and every energy is bent to reduce the percentage of retardation. A low retardation percentage is looked upon as an achievement. In the ideal situation a large percentage of the children are “at grade.” This ideal but

unattainable classification of the children may be visualized as follows:

<u>Grade</u>		<u>A</u>	<u>G</u>	<u>E</u>	
I.....	6	_____			7
II.....	7	_____			8
III.....	8	_____			9
IV.....	9	_____			10
V.....	10	_____			11
VI.....	11	_____			12
VII.....	12	_____			13
VIII.....	13	_____			14

We may designate this method of classification arbitrarily as horizontal. But the fact of the matter is that, maturity aside, horizontal variation is a comparatively unimportant means of grouping. The real variation, the difference in the things that count, run vertically. Running the eye along any of the age groups noted above, we shall find a degree of variation in intelligence ranging from idiocy to genius. Children similar to both of those described in the beginning of this chapter can be found in any age group. This method of grade grouping results practically in almost entire lack of homogeneity. Does it not seem that the grade designations should be removed and that other more appropriate designations should be so placed as to indicate vertical instead of horizontal division? If we visualize the type of variation referred to, we find a situation something like this:

GRADE	AGE	FEEBLE MINDED	DULL	AVERAGE	HIGHLY ENDOWED	GENIUS	AGE
I...	6						7
II...	7						8
III...	8						9
IV...	9						10
V...	10						11
VI...	11						12
VII...	12						13
VIII...	13						14

The reader's attention was called in the last chapter to the fact that some of these children are, in mental terms, nearly twice as old as others, the exact range in mental age at the six-year chronological level being from less than 4.2 to more than 7.8. But this does not tell all of the story. The fact of the matter is that, because of the

constancy of the I.Q., the divergence in mental age does not remain fixed. It increases from year to year, making the group continuously less homogeneous. At chronological age twelve, the children who entered school with a mental age of 4.2 will have advanced to a mental age of 8.4 and those who entered with a mental age of 7.8 will have advanced to mental age 15.6, a difference of 7.2.

It must be obvious, unless the reader is prepared to assert an entire lack of confidence in the intelligence testing movement, that the most highly endowed of these children cannot at the same time be educated in unsegregated groups and educated to capacity. The question then presents itself bluntly as follows: Can our society afford to under-educate the most highly endowed? Is it essential to make a formal effort to educate the entire group? It is to an effort to formulate a reply to these questions that the following paragraphs will be devoted.

The highly endowed do not necessarily take care of themselves—There seems to be an inborn and persistent theory in the mind of the average person who thinks on the subject that genius "will out," that if you have it in you "it will come out," that you "cannot keep a good man down," and more to the same effect. But the facts must be otherwise. In order for genius to come out in spite of difficulties such as poverty or ill health or other adverse circumstances, factors other than mere ability must surely be present. The fact that in some cases it does come out is much more likely to prove an exception than a rule. The chance is excellent that when undiscovered or hampered by circumstances we shall have the rose that is "born to blush unseen." There must in fact

have been in the ages that are gone many "a mute inglorious Milton."

If Hamlin Garland had had, in addition to poverty, to battle with the poor health from which Robert Louis Stevenson suffered, or if Stevenson had had to face the rigors of poverty which were Garland's lot for so many years of his life, neither the one nor the other would ever have taken his place in our literature. In the case of Stevenson wealth saved a genius, and in the case of Garland superb health overcame enormous obstacles.

Both men were worth saving; and among those who have never been heard from there must have been countless men and women who were not at the proper time saved by either wealth or health; men and women who, nevertheless, were potentially capable, had they been discovered, of enriching human life. The fact of the matter is that we have so far in human history depended on accident, such as the possession of wealth, intelligent parents, social rank, superb health, or extraordinary perseverance and self-denial, to save high endowment for the race. Many persons of endowment equal to that possessed by those who finally made contributions to the arts, letters, philosophy, and invention must have remained undiscovered because of the lack of some of these secondary advantages.

Francis Galton's study of hereditary genius is frequently referred to. He found that the 977 eminent men whom he studied had a total of 535 relatives of a degree of eminence equal to their own. On the other hand, 977 ordinary men were found to have a total of only four eminent relatives. This means that an eminent man has

on the average 134 times as many eminent relatives as has the average man.

This study has been cited, and properly so, as proving overwhelmingly that high ability is hereditary. But it must be true that part of this very great difference between the two groups is due to the fact that, in an established European country particularly, potentiality when it appears among those who have birth and rank will be fostered and, on the contrary, when it appears among those who have neither birth, nor rank, nor wealth, may be lost; unless it is accompanied by other qualities such as superb health, extraordinary temperament, or other fortunate accident, it may remain undiscovered.

The writer ventures the assertion that if the eminent relatives were divided into two groups containing on the one hand ancestors and collateral relatives and on the other hand, progeny, those of the 977 eminent persons who were born to wealth and rank would be found to possess eminent relatives in all three groups, while those who were the first of their line to achieve eminence would be likely to have relatives only in the group containing their progeny. The attentive reader of those fascinating books by Hamlin Garland, *A Son of the Middle Border* and *A Daughter of the Middle Border*, will find that he had ancestors, collateral relatives, and progeny of high endowment. While his children will have every opportunity to be discovered and educated to capacity, his father remained unknown, and some of his brothers and sisters found early graves in the prairie because of physical incapacity to stand the severe strain of pioneer life.

Accidental discovery is certainly better than no discovery at all, but, in view of our present ability to dis-

cover and to foster high endowment, no society can afford to risk the waste of its most precious resources.

Other countries consciously develop leadership and creative ability—The proposal to segregate and specially educate the highly endowed is not anything “new under the sun.” Plato suggested it. The European school systems, although the grounds on which selection is made are arbitrary and unjust, maintain special opportunities for a small group which, in the long run, are likely to reach very many, if not all, of the highly endowed. Though they select for their secondary schools and universities on the basis of social rank and wealth, they do in fact train a selected group for leadership. They have provided a mechanism for the maintenance and development of the arts and the amenities of life.

In America, on the other hand, failure to avail ourselves of the possibility of reorganizing our schools and differentiating education is harmful in two ways: On the one hand, the presence of the very dull with the main group is slowly lowering the standards of all the links in the educational chain. On the other hand, failure to develop the very bright to their highest capacity represents sheer waste of the kind that we can least afford.

Our unitary system fosters mediocrity—In the fields of science, commerce, and industry, the goads of a competitive world are keeping America in the first rank. So far as concerns these fields, a plea for the discovery of high endowment would represent a plea for the highly endowed individual. But in the things that make for an enrichment of human life and which are not measurable in monetary terms, we are undoubtedly facing in the wrong direction.

Here we face a social problem which will not regulate itself by competition and money-making. As a matter of fact the reverse is more likely to be true. Those who cater to the economically comfortable and spiritually mediocre command the means to divert talent from noble to meretricious work. Here we enter a field where diffusion of a modicum of education and the exaltation of the popular standard, so easy in a country trained to think that every man is as good as every other, represents in social terms a positive danger. An undifferentiated, single, democratic school is, for the most highly endowed, an inferior educating means. The application of a political theory of equality to an institution which is governed by laws not susceptible of modification by statute, is a dangerous experiment.

Mediocrity on a large scale, such as is now overwhelming our society and giving the finer values an appearance characteristically designated as "high-brow," can hardly be regarded with equanimity. It is a problem, though one may be accused of excessive seriousness, of saving the social heritage.

This mediocrity, wide-spread and fluid, has become extraordinarily standardized. Bertrand Russell has recently outlined a philosophical explanation for our outlook.³ "American civilization is not a special kind, like the civilizations of India and China; it is merely the result of mechanism applied to Europeans. . . . America, owing to the fact that it is a new country, has offered less resistance to mechanism on the ground of old tradition than European countries have, and has therefore shown sooner than we have what sort of culture indus-

³ See *The Nation*, Vol. CXVII, p. 32.

trialism tends to produce. [This industrialism] gradually kills all instinctive joy of life, and will lead, by war, revolution, or sterility, to race suicide."

If we are to be saved from mediocrity and standardization, it must be by the few who have the individuality to resist standards of the moment and the capacity to inherit and carry on the finer heritage of the race. This is a social question not lightly to be passed over. The American people probably compare favorably in intelligence with any other racial or national grouping. They compare as favorably from the point of view of wealth, which means, or ought to mean, in effect, the power to command leisure and to make life beautiful. All the usual inspirations for song and story, for music and the graphic arts, are to be found among us. But these arts lead an esoteric, petted, orphan existence. They are not indigenous.

This means, in effect, vast resources for beautiful living unutilized. It means on the part of the masses failure to participate, and on the part of the potential few, failure to create. It means, within all the safeguards of modern material civilization, spiritual savagery. It means crass and comparatively low standards where we might have noble ones.

Our very economic prosperity, represented by the widespread leisure and wherewithal to command entertainment, is threatening to lower permanently those finer pursuits, play on the highest intellectual level, represented by the various arts. "The culture of a country in the narrow sense," to quote Mr. Russell again, "its painting, theatre, music, literature, science, etc., may be supported by the State or by private patrons. Certain

forms may be supported popularly—cinemas, music-halls, sentimental fiction are cases in point. But it is generally agreed that the popular forms are not, as a rule, the best; even those who only go to cinemas admit that Shakespeare is better. Most of the best poetry and music of the past is a product of court life—for example, Homer and Mozart.”

What is the democracy doing to replace, for the purpose of conserving that which most deserves to endure, the courts and private patrons of older communities? In America it is not a case merely of a contending popular taste. This popular taste, self-assured because of political ideals of equality and the distribution of prosperity, is broadcast and is rapidly established by modern agencies on the whole fine but in this instance detrimental—the telegraph, the telephone, the railroads, the press.

Current culture, tending as it does to become standardized as well as mediocre, sets up a resistance to individuality hitherto undreamed of in massiveness, rapidity, and extent of distribution. An economic society which increasingly standardizes not only processes of manufacture but the very routine of daily life, a society which, by virtue of organization and concentration, abolishes the individuality and variation of geographical divisions and makes the man on the Pacific Slope attend the same movie as the one on the Atlantic seaboard, wear the same national brand of clothes, smoke the same cigar, base his opinion on the same syndicated news, purchase his cheaper articles in the same red-front five-and-ten-cent store, tends to create a uniformity in which the sort of accidental variation, on the spir-

itual level that gives genius a chance, becomes decreasingly possible.

"Quantity production of qualitatively standardized" goods has some virtues, but it tends increasingly to make odd that deviation from type which holds promise. Life is becoming depressingly automatized. "The placement division of the Chicago high schools is at an increasing loss to fill the calls for dictaphonists as against stenographers, for comptometrists, rather than bookkeepers, for machine operators of all kinds, for mimeographers and stencilers, filers and addressographers. Half a dozen office technologists in commerce and administration can nowadays direct the office staff of an entire railroad." If America on the higher level is not to represent evenly distributed and thoroughly well standardized mediocrity, the most capable must be educated in terms of their own capacity. Political democracy and its formulas, when applied in other fields, may become very definitely detrimental and inimical to the social good.

The public school is becoming decreasingly efficient—For some years we have been bending our energies toward improving the holding power of the public schools, toward preventing the dropping out from school during the upper-grade years of large numbers of the population, and toward increasing the percentage of those who persist through the high schools. Our efforts have been rewarded. The increase in high-school attendance within the quarter-century, the growth of the high-school idea, and, in consequence, the overwhelming increase in college enrolment, are all too well known to need elaboration here.

All this is socially of the highest value. But it involves disadvantages which were not realized at the beginning of the drive for a longer period of schooling for a larger proportion of the population, disadvantages which should not be blinked. *The larger the percentage of the population retained for the upper grades, the high school, and the college, the lower the average capacity of the group under instruction.* The lower the average degree of intelligence, the lower the standard that must inevitably be set in all of these schools. In other words, the invasion of the American high schools and colleges by these larger groups is lowering the standards in these institutions and is actually making them poorer places than ever before for the education of the best minds.

The high schools and colleges are probably not so stimulating, and the standards set not so high, as they were twenty-five or fifty years ago. They are not so well suited for the training of leadership as they once were. The American university professors are, indeed, complaining of deterioration in the quality of their graduate students.

Were we faced with the need of choosing between the alternatives of educating a selected group and neglecting the masses, or educating the entire population, as is at present the case, we should unhesitatingly choose the latter policy. Undoubtedly it would be to the advantage of the community, if such choice were inevitable, to elevate the general standard of the largest possible percentage of the population, rather than to develop a few to their utmost capacity and neglect the rest. But no such course is forced upon us. We are now pursuing one

of these alternatives to the neglect of the most highly endowed, but there is no need for it.

Differentiated education, developing each group, would be just to all, sacrificing none and utilizing for society as a whole all of its latent resources of intelligence. Under such a system each group could be held to its own maximum potentiality, and the lower levels of intelligence would not, as they do to-day, actually bar the way of the most highly endowed to an adequate education. This last statement is not fanciful. It is a simple fact that for the small percentage of most highly gifted children so far discovered there are in America no school facilities.

Why modern educational theories "don't work" — Complaint is heard on all sides, particularly from intelligent parents, that the schools are decreasing in efficiency. Those who read the educational literature demand the reasons why the schools are not applying the theories of the educational philosophers. New ideas, usually old ones in new forms, are continually brought forward. The socialized recitation and the project, the Dalton plan and other devices for individual direction, have their day, but the schools continue in the same rut.

The reason for this is that they must do so. *The theories of education are never applicable to the entire pupil group. No theories ever will be.* In view of what has gone before, let the reader consider this dream of one of the educational philosophers.⁴

If we are really concerned to secure a maximum of growth, it is necessary to foster the attitude of acting with reference to all the interests that are involved in the given situation. . . . The only safe position is the view that impulse has no inherent

⁴B. H. Bode, *Fundamentals of Education*, New York, Macmillan, 1921.

moral quality and that sound moral education consists in developing the attitude or disposition to act with reference to all the aspects of the situation, and neither from momentary caprice nor from loyalty to an abstract standard.

The philosophers keep on spinning fine theories about "education," sublimely indifferent to the fact that their ideas are never applicable to the entire population. In concrete technical terms, there is no such concept as "education."

When the school population has been segregated into groups of approximately equal educability, a new day will have dawned for American education. Then these alluring and apparently sound educational goals and theories, whose inapplicability we find so baffling, will come into their own. We have been trying to accomplish the impossible and have, quite inevitably, failed.

III. How Shall We Classify the School Population?

Present basis of selection admittedly crude—While the case for differentiation seems unanswerable, the reader is not to understand that the present method of selection for this purpose is in any way final. From the point of view of future development, it must be very crude indeed. It will ultimately be necessary to make a more thorough study than has ever yet been made of the child subject to training, and to adjust school work to the realities discovered by experimental psychology. Quite conceivably, there are emotional and maturity ages. Whether these ages are susceptible of acceleration as is the case with the so-called pedagogical age, or not susceptible at all and definitely fixed in potentiality as is the case with ultimate mental age, we do not know.

In the face of these many phases of variation, the problem of homogeneity for purposes of instruction becomes complicated indeed. It is quite clear that homogeneity on the basis of chronological age is an impossibility, if only on account of the established variation in mental endowment. When to this are added the facts of possible variation in emotional capacity still to be discovered, and the known variation in anatomical development between individuals and between sexes, as well as the unknown but surely existing variation in the development of what may be called, for want of finer discrimination, maturity, it is easy to realize how crude has been our grouping of children for purposes of instruction. What is equally clear, however, is the fact that grouping children merely on the basis of the elapsing of time from birth is far from adequate.

If we are to-day asking for classification on the basis of intelligence, it is because this factor, undoubtedly one of the most important in any ultimate consideration of indices, is at the present time the only measurable one. Ultimately, the mental age may come to be divided by chronological corrected by anatomical age, if not directly by this latter; and the other factors of educability will be given their full value. Our ultimate index will be a combination of measures correlated to produce a ratio of educability.

But, unrefined and crude as our measure to-day may be, the fact remains that children differ in capacity. We may continue to improve our instruments of selection, but such improvement will only help us the better to segregate in accordance with differences which we know exist. Our very safest procedure is to deal in percentages

of the population. If traits are distributed in accordance with a law of nature, as they seem to be, then we shall always have an upper, a middle, and a lower group.

The factor of mental age—We come, then, to the specific problem of classification. On what basis shall children be segregated for purposes of instruction? "The significance of mental age for the teacher," says Terman,⁵ "lies in the fact that it can be used as a basis for grading the pupils so as to secure class groups of homogeneous ability." This suggestion has frequently been made in the course of the discussions that have resulted from the development of the intelligence testing movement. It is a suggestion that seems to grow out of the fact that mental is a more reliable index than chronological age and that, were there no other choice, the suggested method would probably be preferable to no reorganization.

Three considerations, however, would seem to make clear the impracticability of this suggestion. In the first place, qualitative intelligence differences do exist, and even at a given mental age the very dull and the very bright are different people. In the second place, on account of the constancy of the I.Q. as already indicated, this mingling of every type of intelligence on the basis of a temporary similarity holds good for a very little while. It in no sense presents the possibility of permanent organization. Finally, and most important, the only theory on which such an organization could be suggested is a theory of undifferentiated education, an endeavor to give all children of a given mental age similar educational opportunities. In terms of the future of these children and of the social interest in their development, the edu-

⁵ In his *The Intelligence of School Children*.

cation of the groups must be differentiated. The only method of accomplishing this would seem to be found in the use of the I.Q. as a criterion.

The typical group—How, then, shall we group children for purposes of instruction? Obviously, the central or typical group will be the largest, the group to whom the present system of education is quite well adapted. To select this group, we must center our attention on I.Q. 100, the absolute median, and go some distance in either direction. How far shall this distance extend?

In his book, *The Measurement of Intelligence*, Terman, without perhaps having particularly in mind the problem of classification for purposes of education, refers to the group between I.Q. 90 and 110 as possessing normal or average intelligence. His classification has been repeated by many others in the literature of education, although established by him only in a tentative manner. The group thus designated includes approximately sixty per cent of the population.

In his book, *Intelligence Tests and School Reorganization*, Terman suggests that the average group might consist of from fifty-four to seventy-eight per cent of the population. The present writer suggests, on theory, it is true, that the central group might well be composed of seventy per cent of the population and that a grouping of this sort would exclude, on the one hand, all who are entitled to special opportunities and, on the other, those who cannot take advantage of a standard education.

A classification on this basis would, using the present standards, include the group between I.Q. 89 and 112. Children below I.Q. 112 can hardly be said to be extraordinarily well endowed, and children below I.Q. 89 would

under ordinary circumstances find it difficult to keep pace with the standards of achievement set by children of I.Q. 100, the center of the group. It may be claimed, of course, that children of I.Q. 113 are not extraordinarily endowed, and that children of I.Q. 88 are perhaps not very dull. But adjectives are dangerous where precise terminology has not yet been developed. The problem is not one of describing these children, so much as one of establishing the central group. An intelligence range greater than that which includes thirty-five per cent on either side of the median would certainly tend to destroy that prime essential of group instruction, homogeneity.

From the point of view of the educational welfare of these children, it would seem that the selected group should be sufficiently homogeneous to insure fairly even progress and, with a reasonable degree of resiliency, avoid too large a percentage of either retardation or acceleration. At the entering age six, the dullest child in the typical group as here constituted would be mentally more than 5.3 years of age, while the brightest would be 6.7 years of age, a span of less than a year and a half, and a distance that need hardly be seriously considered when one bears in mind the fact that simultaneous instruction is never consistent with absolute homogeneity, as well as the operation of the factors of maturity and diligence in overcoming handicaps which are always present to some degree.

It is, of course, true that the disparity keeps widening as the children grow older. The oldest point that need be considered is age twelve, when differentiated education in the junior high school, specifically adapted to type of ability, has been set in educational theory. At this, the

point of greatest divergence, the dullest child would be mentally 10.7 years of age while the brightest would be 13.4, a difference somewhat more than two and a half years. But evenness of progress is an ideal that cannot consistently be set up where we are dealing with mass education. In accomplishing the set objectives, the dullest child who may in the course of his career have had to repeat a difficult grade will arrive at the end of the elementary school somewhat late, as the brightest child may arrive somewhat before chronological age twelve, in that way reducing the theoretical difference in mental age. At all events, it is a hypothesis whose validity must ultimately be determined by test.

The prodigies and the feeble-minded—What shall we do with the groups below and above the seventy per cent at the center? When we turn our attention to the extreme at either end, we find children very far removed indeed from norm. Some are feeble-minded. Some are prodigies. Neither the one nor the other can be absolutely designated in terms of I.Q.

The reader's attention was directed in the last chapter to the important fact that the present quantitative method of measuring and designating intelligence is, in terms of probable future developments, comparatively crude. Within any quantitative grouping, no matter how narrow the range of I.Q. may be, there are qualitative differences. In fact, two persons achieving by test the same I.Q. may and usually will differ in quality of intelligence. These facts we know, but cannot accurately distinguish. We cannot at the present time make important educational use of them.

And yet certain facts are obvious. The so-called

border line is the point at which intelligence quotients alone cannot be permitted to establish a classification whether it be feeble-minded, typical, or highly endowed. Other factors simply must be considered. "Fundamentally," says Doll, in the article already referred to, "feeble-mindedness is social inefficiency, and no mental age standard alone will enable us to separate the morons from the inferior normals. . . . Intelligence quotients and mental ages have been abused as means of diagnosing feeble-mindedness. Both of these factors are essential considerations in the diagnosis, but must never be considered as sole determinants." In other words, near the border line a given I.Q. may or may not designate feeble-mindedness.

Will the same reasoning hold at the extreme upper level? One strongly suspects that it will. This chapter opened with the description of a child so outstanding in ability that in a million of the population there might be none to equal him in general intelligence. Yet the investigators state that "he has no hobbies."

On the other hand, current despatches report that Rota Rinaldi, eleven and a half years old, has composed an oratorio and conducted the orchestra and chorus in a public performance of his work at Milan. The literature contains references to many similar cases. Josef Hofmann, the pianist, is said to have made his first public appearance at the age of six. Mozart appears to have composed his first published work in his sixth year, and to have written ten sonatas by the time he was eight years of age. Francis Galton "was conversant with the Iliad and the Odyssey" by the age of six, "Tasso was famous at the age of eight, and Southey wrote dramas

before that age. Macaulay read incessantly at the age of three; at seven he began a compendium of Universal History; and at eight he wrote A Treatise to Convert the Natives of Malabar to Christianity.”⁶

It is not probable that Rota Rinaldi has more intelligence, quantitatively speaking, than our subject E. It is much more likely that very high intelligence expresses itself in two ways, either in generalized ability of a high order or in extraordinary ability in a single field, which crowds out, for the time being or permanently, other interests.

This suspicion will readily commend itself to the student who has gone over considerable supplementary data regarding children who have attained high I.Q.’s, because some of them are just ordinary bright children who have aroused no particular attention, while others have outstanding, marked abilities which singled them out from infancy. This observation is most interestingly confirmed by Havelock Ellis in his *Study of British Genius*. He comes to the conclusion, on the basis of the objective study of the biographies of a large number of men of eminence, that on the mental level there are two courses open to the child who is destined eventually to display preëminent intellectual ability: he may show extraordinary aptitude for acquiring the ordinary subjects of school study, or he may show only average and even lower than average aptitude for ordinary school studies, but be at the same time engrossed in following up his own preferred lines of study and thinking.

This is a rather mild description of the dynamic force

⁶ From Herbert Woodrow, *Brightness and Dullness in Children*, Philadelphia, J. B. Lippincott Co., 1919.

so frequently found behind the special impulse. Take, for example, the case of Betty Ford. This child, discovered and described by Terman, has an intelligence quotient identical with that attained by E., described in the beginning of this chapter. *Quantitatively, they are of the same intelligence status.* But, while E. has no hobbies, Betty at the age of seven and a half years composed this poem: ⁷

MY PRAYER

Oh, Master of fire, Oh, Lord of Air,
 Oh, God of waters, hear my prayer.
 Oh, Lord of ground and of stirring trees
 O God of man and of pleasant breeze
 Dear Father. Let me happy be
 As happy as a growing Tree.

What, then, shall we do in this matter of classification for purposes of instruction? Terman says⁸ that the "solution of the problem of individual differences may be sought in either of two directions: (1) in the individualization of instruction, or (2) in the formation of more homogeneous classes for group instruction." To the writer it would seem that both of these methods must be applied. For reasons to be gone into somewhat in detail in the next chapter, the suggestion may be hazarded that qualitative differences probably increase as we go upward from norm toward high intelligence and probably decrease downward from norm as we approach poor endowment. If there is any validity in this assumption, then the problem of homogeneity becomes less difficult at the lower intelligence levels, and more difficult at the

⁷ From L. M. Terman and J. C. Fenton, "Preliminary Report on a Gifted Juvenile Author," *Journal of Applied Psychology*, Vol. V, p. 163.

⁸ In his *Intelligence Tests and School Reorganization*.

higher ones. In other words, individualization of instruction will be much more essential in the upper than in the lower groupings.

The fact of the matter is, and this is here presented as a thesis, that the most highly endowed children are so definitely individual that they cannot be grouped from the point of view of homogeneity for the purpose of instruction. The present writer desires to state categorically that they cannot be considered as ordinary school problems. The future surely holds a special psychology and pedagogy of genius, but for practical school purposes it would seem impossible to effect a grouping which would offer the most highly endowed children anything like real school opportunities.

As a matter of fact one wonders whether these children need any formal instruction in their early years, in view of the fact that they so often enter high school without ever having really attended the elementary school. They seem to pick up reading, no one knows how, and the rest takes care of itself.

It is his conviction, says Terman, that, "ideally, provision should be made for five groups of children." It is practical, as we shall try to indicate later in this chapter, to divide the child population into five groups. It would seem practical to provide facilities in the public schools for three of these groups, the typical and the groups immediately below and immediately above. The lowest of the five groups belong in state institutions rather than in the public day schools. The uppermost of these five groups would seem to contain some children so markedly endowed and possessed of such outspoken individuality that the schools, if by the term we mean an institution for

simultaneous or group instruction along the lines of a given curriculum, no matter how flexible, are not prepared to take responsibility for their education. It may be that E. could be offered advantages in a school specially maintained for the highly endowed. It is not likely that such advantages could be offered to Betty Ford.

For reasons outlined in detail in the first chapter of this volume, the very lowest group, the feeble-minded, do not belong in the public schools. For reasons of practicability, i.e., the impossibility of making satisfactory provision for their education, it ought to be frankly recognized that the most highly endowed can hardly be said to belong in the public school except as individual cases.

How shall we select these last named children for exclusion? The most obvious answer is one dealing with percentages of the population, and the answer will do if we recognize that neither the percentage nor the intelligence index at present used to locate these children is absolute.

Let us assume that it would be advisable to exclude the three per cent of the population who reach an intelligence quotient of 125 or more and the three per cent who are found to possess an intelligence quotient of 76 or less. It does not follow that all those excluded in this way are either feeble-minded or prodigies. In fact it does not mean that all who reach either the higher or the lower I.Q.'s will be excluded.

What we are really trying to say, with the use of present terminology and tentative population percentages, is that the present school cannot be, and ought not to be made to be, a place for the education of either prodigies or feeble-minded children; and, further that ninety-four

per cent of the population, divided into three groups or schools, would doubtless be better cared for in a differentiated manner adapted to their intelligence, if the other six per cent were definitely recognized as not presenting school problems.

The lowest three per cent belong in institutions. The highest three per cent present a great social opportunity, but they are not educable in groups. Extraordinary individuality, the possession of characteristics that make against homogeneity for purposes of instruction, is the most distinguishing mark of intelligence at the highest level. Once more, there is no intention to imply that a given I.Q. means either feeble-mindedness or genius. Other qualities must be considered at the border line. But some children at either extreme, somewhat arbitrarily assumed to number three per cent of the population at either end, represent non-school problems.

The super- and the sub-typical—The reader will recall that we commenced this discussion with the proposal that the central group shall consist of seventy per cent of the population. Having excluded three per cent at either extreme, the conclusion must be obvious. We propose a three-type system of schools. In addition to the typical school, there should be one for dull children and one for the bright. Each of these schools should enroll, roughly, twelve per cent of the population.

The range in I.Q. of the school for the dull will be from 77 to 88 inclusive. The pupils of the school for the bright will range in I.Q. from 113 to 124 inclusive. In each of these schools there will be found children of higher or lower I.Q. than here indicated, for supplementary reasons found by investigation and experience, but not disclosed

by intelligence test on the basis of which the first classification was made. Let us stop to examine this distribution as it would work out practically for a thousand six-year-olds entering the public school at the beginning of any school year.

PROPOSED CLASSIFICATION OF ENTERING SCHOOL CHILDREN

<i>Type</i>	<i>Number per thousand</i>	<i>Range in I.Q.</i>	<i>Range in mental age</i>
Prodigies	30	125+	7.5+
Super-Typical	120	113-124	6.8-7.4
Typical	700	89-112	5.3-6.7
Sub-Typical	120	77-88	4.7-5.2
Feeble-Minded	30	76—	4.6—

A glance at the foregoing statement will, in the first place, indicate to the reader the total inadequacy of the present system of undifferentiated instruction. The mental age range of the children as they present themselves to school is from less than 4.6 to more than 7.5. Some of the children are, mentally, nearly twice as old as others, and this divergence, assuming the constancy of the I.Q., actually increases from year to year.

Differentiated education is practicable for comparatively small school systems—The classification suggested above is perhaps not the best possible. Practice may develop another system. The suggestion is, after all, made in the hope of arousing discussion. But reasonable homogeneity has certainly been achieved by this grouping. The range in mental age has been cut for all three of the groups proposed as public school problems, and the reader who belongs in a system where as many as five hundred

children are enrolled in the schools annually may note the practicability of providing differentiated education without additional cost per teaching unit.

Such a system might contain as many as thirty unclassifiable children, some extraordinarily bright and others institution cases, but there would be sixty super-typical children, enough for two teachers in each instance, and three hundred and fifty typical first graders. When it is demonstrable that a school system which enrolls as many as two hundred and fifty six-year-olds annually can establish differentiated education, since this group would furnish enough children to warrant the assignment of one teacher to the super-typical and one to the sub-typical, failure to inaugurate differentiation would seem fairly difficult to defend.

Nomenclature—The nomenclature of differential psychology, and, therefore, of this phase of educational discussion, is in a most unsatisfactory state. The central group, located merely by the operation of statistics, is frequently referred to as normal. The upper group is described as superior, supernormal, gifted, and by other terms that indicate quality, when, as a matter of fact, the only certain distinction is a quantitative one. the possession of more intelligence.

The writer proposes and will in the rest of this volume employ a definite terminology. At the upper and at the lower extremes it seems possible, as has been indicated in the preceding discussion, to discover qualities of intelligence. The children at the lowest level to whom we have reference are already being designated as "feeble-minded." For the children at the extreme upper level, the writer would suggest that we reserve the term "prodi-

gies." This is a word that has never had definite significance, and it might well be used as a designation for the three per cent of the population most highly endowed, although, as a matter of fact, some very highly endowed children who do not indicate marked aptitudes might in practice be classed with the group below. Like the word "genius," the word "prodigy" has so many connotations in literature, history, and daily conversation that its use as a designation on the basis of test may come somewhat as a shock, but a commonly agreed-upon word is urgently needed.

For the remaining ninety-four per cent of the population, quantitative terminology should serve. If we could agree on referring to the central group consisting of, say, seventy per cent of the population as typical, and that describes the simple fact, then the twelve per cent immediately above are super- and the twelve per cent immediately below are sub-typical.

Qualifications—It would seem to be unnecessary, and yet may prove to be the part of wisdom, to make a number of clear-cut qualifications: We do not maintain that the present intelligence quotients are final as designations or indices for the five groups into which we have classified the school population. We prefer to deal in terms of percentages of the population, but the percentages suggested may prove to be erroneous or impracticable. It may be that only one or two per cent of the population rather than three per cent as suggested can be classified as either prodigies or feeble-minded. In fact, the entire classification may prove to be over-symmetrical. It is quite probable that two children found to possess the same intelligence quotient would be classified the one as a

prodigy and the other as super-typical. Similarly, thinking in terms of the other extreme, one might be classified as feeble-minded, the other as sub-typical.

At the extremes of intelligence distribution, and at every border line, supplementary evidence comes most actively into play. Much heat can be avoided by bearing in mind the fact that classifications need not necessarily be final. If a child has been wrongly located, either because of lack of ability on the part of the examiner, deficiency of the test used, or particular characteristics of the child not brought out by the test but called into play by his actual school work, the child can easily be relocated. One must have a very poor opinion indeed of the experience, ability, and professional interest of the teaching profession, to dread that once classified, always classified. Wrong classifications would ordinarily be corrected.

IV. Summary

Although children vary all the way from precocity to feeble-mindedness, the school meets the situation with a single-type procedure. Where modification of the procedure takes place, it is in favor of the dull, who simply cannot do the work of the ordinary school. We thus have, in a sense, a double school system, favoring the dull.

Highly endowed children must in the nature of things remain undiscovered unless systematic effort is made to find and to foster this social asset. European schools, though their selection is made on the basis of arbitrary and unjust criteria, do train a special class for leadership. Our unitary system is harmful in two ways. On the one hand, the presence of the very dull with the main group is slowly lowering the standards of all the schools in the

educational series. On the other hand, failure to develop the very bright to their highest capacity represents waste of the kind that we can least afford.

The suggestion is made that the child population be divided into five groups—prodigies, super-typical, typical, sub-typical, feeble-minded—and that only the three central groups belong in the schools. A prodigy is defined as a child possessing an intelligence quotient of 125 or more, and a feeble-minded person as one possessing an intelligence quotient of 76 or less. With the understanding that the I.Q. is, at the extremes and at the border lines, not to be relied upon exclusively, and that supplementary data should be employed, the position taken is that the feeble-minded should not, and the prodigies cannot, be educated in the public schools.

For the other three groups, special schools should be established, to care for three types of children as follows: a school for the super-typical, containing the twelve per cent of the population who range in I.Q. from 113 to 124; a school for the typical, containing seventy per cent of the population who range in I.Q. from 89 to 112; a school for the sub-typical, caring for twelve per cent of the population who range in I.Q. from 77 to 88.

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CHAPTER V

THE PROBLEM OF DIFFERENTIATING EDUCATION ON THE BASIS OF INTELLIGENCE

I. What Is Differentiated Education?

We have so far failed to establish differentiation—Even before the exact findings of current psychological studies concerning the great variation in endowment of the pupil population, school men had become aware of the futility of classification on the basis of age. But, instead of starting boldly *de novo*, and without any tradition whatever, to determine the best method of grouping children for instructional purposes, we have now for something more than fifty years been endeavoring to tinker with the old method as if its continued existence were inevitable, as if grade grouping and simultaneous instruction were synonymous, and as if the advantages of the latter could not as well be attained by grouping on any basis whatever.

Dr. W. T. Harris, then superintendent of schools in St. Louis, noted as long as fifty years ago the hopeless inflexibility of the grade system, which threw children together merely on the basis of approximate equality of chronological age, and held them together for an entire year, when the most promising were sent on, and the worst pupils were held back and compelled to repeat everything and work another year before an opportunity to advance was given them. His method of solving the

problem consisted of the establishment of more frequent classification. The general effect of this was to produce a semiannual promotion period almost everywhere in the country; and many cities, as St. Louis itself, promote more frequently than that.

This attempted solution by reclassification, the first of several methods to be noted for mitigating the inflexibility of the grade system, is probably the best of them; but it is also to be noted that the fundamental need for this frequent reclassification arises from the fact that the original grouping has not been based on any test of homogeneity. Why must the schools keep continually re-shuffling the children and trying to adapt them to the rigidity of the eight-grade grouping as if the calendar-year system were unalterably basic?

Granting the inevitability and, indeed, the utility of the principle of a simultaneous instruction, why should we not contemplate a complete reconsideration of groups in terms of new and real units of homogeneity? In a large number of cities reporting promotion of individuals within the term, we have a costly and exceedingly clumsy method of readjustment. In one city, for example, more than three thousand children are given special promotions each semester. Although this method is followed in the name of progressive education, enabling, as it does, the brighter children to save time, it must appear exceedingly crude, when one realizes that the readjustments would not be necessary were the original grouping more in accord with what we know to-day of variation among children.

Besides the St. Louis method of frequent reclassification and the similar method now largely in vogue of

special promotion of individual children in the intervals between points of general reclassification, we may note three other attempts to mitigate the evil of the grade system. These three attempts may be designated: (1) equality of course and variability of progress; (2) equality of progress and variability of course; and (3) special attention to individuals within the group.

These various methods of mitigating the evils of the grading system by accommodation to it as basic, rather than abandoning it, have been carefully described by Holmes and other writers in some detail and need not detain us here. Briefly stated, the method of equal course with varying speed, particularly illustrated by the practice of such cities as Cambridge and Portland, Oregon, represents the work of the eight years of the elementary school organized in such a way and in such groups, and providing for such means of shifting from group to group, as to allow a term ranging from six or seven to eight or nine years for the completion of the course, in this way presumably taking care of the varying types of ability. The same amount of work is provided for all, but the organization is so flexible as to allow each person to approximate the maximum rate of which he is capable.

The method that has been referred to as equal progress but varying course is commonly known as the Santa Barbara method, and is organized on the theory that all children should be kept in school not less than and no more than the standard eight years. In order to accomplish this result the amount of work demanded is adjusted to the apparent ability of the child, the school being organized for three types of ability ranging from the minimum or core studies, through average, to more

than average demands. The children progress through the grades at the rate of one year to each grade, but the brighter do more, and the dull do less, than the average grade standard.

The system of working with the individual has at least two phases. The one commonly known as the Batavia plan involves very large classes in charge of two teachers, one going about to assist individual pupils who have difficulty, while the other is teaching the class as a whole. The other system is the one in use at the San Francisco State Teachers' College, where a number of children of approximate ability, in charge of one teacher, are presumably going each at his own rate of progress, following the directions in a bulletin especially prepared for the purpose, and reporting to the teacher at stated intervals and at other times if assistance is required. There are under this last-named arrangement no stated periods of reclassification at all, but the material to be covered is presumably the usual content of the eight-grade school—an extreme extension of the basic principle of the Cambridge plan.

All of these efforts to mend the obvious inefficiencies of the present system of grouping children for the purpose of instruction have certain common and patent defects:

(1) They assume that the eight-grade system of classification, based, as it is, largely on chronological age and on arbitrary calendar units without regard to the nature of children, is inevitable and must be met by adjustment rather than by abolition of the system.

(2) They assume that all children can accomplish the work ordinarily done in the eight grades and that the only difference between them is the rate at which this work

can be done, totally ignoring the existence of primary qualitative differences in ability. Even the Santa Barbara plan provides for doing the core of all the work, presumably doing less in order to graduate all the children in eight years—a theory which would imply that the variation is quantitative, showing itself in rate of progress, and not qualitative, which would mean inability to do the work at all.

(3) They assume that almost the entire school population require the same type of education. The so-called Santa Barbara method does not provide for true qualitative differentiation. The various goals of accomplishment provided for are basically of the same type.

(4) They totally ignore the fact that an unselected section of the population, grouped together merely on the basis of similarity in chronological age, cannot be efficiently instructed. They do not make provision for the fact that, no matter how frequent the reclassification during the period of instruction, the teacher of such an unselected group will inescapably deal with the average ability of the group, inevitably leaving the dullest portion behind, and the most brilliant portion unstimulated, unoccupied, and untaught.

Varying the rate of progress over an identical course of study is not differentiation—The facts that we have brought to the reader's attention in the preceding paragraphs are by no means clear in the minds of the educational profession. As late as the summer of 1923, one still finds the Institute for Public Service solemnly reporting, after due investigation for the purpose of discovering "educational departures of interest," one of ten "innovations" in these terms: "One large city collects pupils

whose mental tests show exceptional brightness from four schools into one class. *There each may go his fastest.*"¹

Of what avail is speed if, at the end of the course, the same goal has been attained by all? How does this meet the facts of qualitative differences among these children which condition their entire future as individuals and the contributions which they will ultimately make to the social good? Will the very dull ever reach the end of the educational course if given time enough, and, more important, is this course suited to prepare them for living on their intelligence level? Is the difference between Betty Ford and the child who had learned to pronounce words of one syllable after eleven years of schooling a difference of rate of progress toward an identical goal?

The futility of the factor of time as a means of adjustment, although there may be no objection to saving a year or two for the most highly endowed where health considerations and physical welfare permit, becomes quite clear when we consider its definite limitations. It is neither possible nor is it desirable to make complete allowance for difference in endowment by sending the more highly endowed group forward more rapidly. American conditions are such that (1) the child must be kept in elementary school for approximately six years, and (2) the elementary school must not make inroads on the secondary-school curriculum. It is well known, if not formally and theoretically stated, that maturity is as essential as intellectual ability, if one is to avail himself to the full of the opportunities of higher education and of association with one's fellows in the higher institutions.

¹ See *School and Society*, Vol. XVIII, p. 250.

It will probably be agreed that no child should be sent to the secondary school before age twelve, but this principle would be defeated if the elementary school undertook to do a year or more of high-school work, and thus sent the child on to college earlier by that amount of time. Again, the elementary school, relying as it does for its teaching personnel on the present teacher-training agencies, is not prepared to carry on secondary instruction. We must, then, retain an approximately similar time period for practically all children, regardless of our improvement in methods of instruction, and of the existence of variation in ability. Presumably it is a fixed habit in America to send children to school at age six, and we are to keep them in the elementary school until age twelve, during which period we must not, and indeed cannot, trespass on the high-school curriculum.

Differentiation must be qualitative, not quantitative—One can perhaps visualize the distinction between the concepts “qualitative” and quantitative” by picturing a defined goal to be attained, and the ways in which its attainment might differ. If one thinks of a number of children starting out physically to reach a certain point some of whom get there and some of whom drop out at different points of the stretch toward the goal, we have a visual image of quantitative differentiation. A number of children ranging in I.Q. from 70 to 125 start out toward the distant goal of college graduation. The dullest of them probably stops before the point marked eighth grade. A better endowed child stops at some point between the eighth grade and second-year high school; and so the road is strewn with contestants until we reach the point of college graduation, where we find the child of

125 I.Q. This child not only started; he persisted to the end. *This is quantitative differentiation.*

On the other hand, we may picture a number of persons as reaching a named goal, but performing quite differently. Iago's rôle may be memorized and acted by a high-school sophomore in a class play, or it may be memorized and presented by Edwin Booth. In this case there is no quantitative differentiation. In each instance, quantitatively, the goal has been attained. The difference is purely qualitative, and so long as we avail ourselves of our ability to differentiate between children for the purpose of making mere quantitative distinction, we are wasting almost entirely the school opportunity presented by the new technic of classification and grouping on scientific lines. It is inevitably true that well endowed children differ from others qualitatively as well as quantitatively, but until we have probed for, discovered, and utilized the qualitative differences, we are not making full use of our opportunity and are not developing these children to their highest possible capacity.

It must be that a segregated group of highly endowed children is as capable of vastly richer emotional life as it is known to be capable of vastly greater intellectual life and development. It must be that this group contains the potential contributions to our civilization, the great creative minds of the future. So long as we fail to avail ourselves of the opportunities to discover and develop these great human resources we are committing most unpardonable waste. So great has been the waste of human material hitherto by virtue of the failure to distinguish and develop outstanding ability that it is probably impossible to forecast what vast changes in human

life would be made by full development of this spiritual material. Highly endowed children do not do the same sort of thing as children of average intelligence more quickly and sooner; *they do it differently*.

II. Elements of the Problem

Although we have so far been dealing largely in negation, we have arrived at these conclusions: (1) Differentiation over the same course of study, taking advantage of the obvious variation among children, to cover the same ground at varying rates of speed, is of comparatively little value. (2) Because of the fact that intelligence development must await the development of maturity, and for other reasons inherent in our educational organization, we must plan for a six-year elementary course, thus limiting not only the possibility of saving time, but as well the obvious device, beginning secondary school studies earlier—that device which sends children to college at fourteen and fifteen and threatens to bring the entire movement for differentiation into disrepute.

We must now face the problem of formulating a sound procedure. In the sections which follow we shall undertake to examine the present status of the theory of the curriculum and to establish general principles for differentiation. In the two chapters which follow this one, we shall attempt to apply these general principles in the one, to the education of the super- and in the other to the education of the sub-typical.

The curriculum objectives cannot be differentiated—It will not be profitable to continue a discussion of differentiation unless we review rapidly the present philosophy of the curriculum as it is becoming established in Ameri-

can educational thinking. It is only on the basis of this philosophy, and in terms of the established educational objectives, that we can eventually speak of differentiation.

Beginning with the brilliant contribution to the problem of the curriculum made by Herbert Spencer, the tendency of our thinking quite definitely established to-day has been to look at complete living as the end to be achieved, to classify life's activities, and to select for school purposes such knowledge, habits, and experiences as will best achieve the purposes of complete and fruitful participation in those activities. Several attempts at a formulation of the ultimate objectives have been made. Assuming that no existing statement is probably complete, final, and fully satisfactory, we may adopt as a basis for our discussion the statement of educational objectives made by the Commission on the Reorganization of Secondary Education, these being seven in number as follows: (1) health; (2) command of fundamental processes; (3) worthy home membership; (4) vocation; (5) citizenship; (6) worthy use of leisure; (7) ethical character.

The outstanding fact about these educational objectives, as about all of the others proposed, is that, as such, they do not permit of differentiation. In other words, we must desire that all of the children found in the public schools shall as the result of their schooling become healthy, have a command of the fundamental processes, be worthy members of the home and the commonwealth, follow a calling, make worthy use of leisure, and live ethically. *The goals are single for all types of the mind. Not the goals, but the means of achieving them, as already indicated, will differ.*

The mode of attaining the goals must be differentiated—From the point of view of the educational objective of citizenship, for example, the difference between the potential statesman and the child whose utmost capacity will be taxed by the vocation of garbage-collecting is marked and measurable before either of them enters the school. It is a political but not a psychological truth that “any boy may become President of the United States.”

From the point of view of the educational objective of worthy use of leisure, the difference between the child potentially able to enjoy symphonic music to the full and perchance to participate creatively in its production, and the child whose utmost capacity for emotional enjoyment will be taxed by the inescapable rhythm and the melodic simplicity of the “popular” song, is equally well marked, although this is a variation which we cannot, unfortunately, for the moment measure.

And so it goes with every other of the goals. In preparation for and anticipation of worthy home membership, vocation, and ethical character, it is useless to fail to note the fact of wide variation in potentiality. Enormous qualitative differences exist, and the complete education of the child demands that they be not overlooked.

In so far as the children of the elementary school are of approximately the same maturity; in so far as we do not desire to trespass on the secondary-school curriculum; in so far as we do not wish to provide electives and work leading to differing careers; in so far as the work is to be distinctly preparatory for the next phase of education, the basis for another school to follow; in fine, from the community's point of view (quantitatively), the

work is to be uniform and universal. *But the uniform work should be done differently in accordance with capacity.*

Unmodified, this is a truism hardly worth stressing. It is time-worn knowledge in educational circles that children vary. But the point here made is that the work required of the children must be deliberately varied, and made to suit varying capacity by qualitative differentiation, within the uniform and universal scope of the elementary-school field. The school is aiming at general objectives. In conformity, then, with the fact that preparation is being made for health, command of fundamental processes, worthy home membership, vocation, citizenship, worthy use of leisure, and ethical character, *within this very scope and range, the school must make provision for variation in work approximating the variation in intensity and quality of ultimate potential achievement.*

A number of persons may each in turn sing the same tune correctly or play violins all conforming to the requirements of the notation, or describe the very same event without violating any of the rules of rhetoric or grammar. This is quantitative uniformity. In this sense the children will all be citizens, producers, members of families, and participants in recreation. In this sense a curriculum may be universal. But what a range of variation is possible from the qualitative point of view! How the voices may vary in richness of tone and color; how differently the violins may sound in depth and roundness of tone, and the expression of emotions; how drab one narrative may seem in comparison with the vividness of the others! This is qualitative variation.

The difference in performance between Kreisler and

the pupil who knows his "piece" is not in accuracy, velocity, or any other of the characteristics that make for correctness. From a quantitative point of view the master and the amateur both fulfil the requirements *in toto*. The difference between the artist and the mere performer is a qualitative one; a depth of feeling, a roundness of tone, a richness of color, a finesse of phrasing—all aside from the quantitative demands. We ought not to blind ourselves to the discernible differences between the future statesman, artist, or philosopher, and the child whose capacity will be taxed by the simplest routine.

III. A Theory for Educational Differentiation on the Basis of Capacity

How shall we achieve the differentiation toward which we have been directing attention? If we can establish a general principle or set of principles that are valid, our next task will consist of applying these principles specifically in the formulation of material and methods of instruction. To the task of establishing such principles we now propose to devote our attention.

The four levels of racial inheritance—Man comes, generation by generation, into his racial inheritance, on three levels of increasing complexity—reflex, instinct, and habit—and carries forward this heritage to ever greater heights on a fourth level, reason.

1. *Reflexes*. In terms of evolution, man inherits those physical responses or abilities to perform reflex actions which have been proved by the race to be essential to living. They represent the experience accumulated by the race in the onward march toward its present develop-

mental state; without the possession of these involuntary responses, the new-born infant would not long survive.

2. *Instincts*. While it is not as true in the human as in the animal world that instincts, those more complicated, routine, and involuntary actions, are an absolute essential for survival, this is due to the fact that man has made his world so complex that the human being can be protected by artificial means. Although in our present society the need for the development of many of the inherited instincts has been outgrown and many of them might better be eliminated, it is nevertheless true that they represent a depository of experience.

3. *Habits*. Education proper may be said to begin when we reach the transmission of those experiences of the race which each generation must learn anew. The simplest basis on which this transmission takes place is that of habit formation. The rudimentary character of this type of education is readily indicated by the fact that, up to a certain stage of complexity, man shares this ability to form habits with many other animals, as he does his inheritance of the involuntary action called the reflex, and the more complicated pattern of involuntary action which we call instinctive.

The outstanding characteristic of habit and habitual ways of doing things, so far as education and human society are concerned, is found in the fact that absolute adherence to habit, generation by generation, precludes progress. Individuals who perform only habitual actions never make discoveries, inventions, or other creative contributions to the social welfare. Societies which stubbornly resist new ways, and cling to the habitual ways of the past, become stagnant.

Continuation, carried on by the transmission of habits in the broad sense—habits of religion, ethics, vocation, social and inter-group relations—is an essential of education if society is to survive. This is the kind of education most commonly found. As an exclusive method, however, it has its dangers, as witness the stunted development of peoples and periods which have relied on it too exclusively. For progress, deviation is as important as continuation. The proper function of education, says Professor Bode,² “is not merely to preserve the achievements of the past, but to prepare the way for further changes.”

4. *Reason.* Progress, advancement, change, adaptation, discovery, invention, the remaking and the enhancement of life, depend on the fourth means of inheriting the racial culture—reason. We refer here to the ability to do two things: (1) to examine a situation, an idea, a belief, a way of doing things, and to formulate a determination of the validity of the fixed or habitual procedure; and (2) to develop new and more effective ways of accomplishing given purposes. It hardly seems necessary to lay before the reader evidence and examples to prove the validity of our reasoning. These he may himself find in the study of any field of human endeavor, whether it be religion, navigation, science, handicraft, or art.

Degrees of inheritance—Habit precedes reason, and that in two ways; (1) with the race as a whole, i.e., historically, and (2) with the individual, i.e., psychologically. In the case of the individual, the ability to form habits precedes the ability to form judgments, make decisions, solve problems, reach conclusions, exercise discretion, act

² In his *Fundamentals of Education*.

on the basis of evidence. Not only does the ability to form habits precede this latter more complicated ability; development frequently goes no further. The central principle of differentiation which we propose to set down in this chapter, and to apply specifically in the two which follow, revolves about this fact.

It will be contended that, as regards some children, the utmost that can be depended upon is the ability to form habits, and as to this group, habit formation should be the chief basis of education. We should carry to the extreme the process of instruction by means of the formation of useful habits. Other children, on the contrary, are most highly endowed in the ability to examine and pass judgment on the accepted ways, as well as to improve them. As to these children, only minor and proved habits should be transmitted. The basic tendency in the instruction of these children should be to foster creativeness.

"Group custom," says Dr. Hart,³ in speaking of education in the world of the folk-ways, "must dominate individual impulse; group habits must be ingrained in individual action until the life of the group is assured from all conflict with individual will. The group must live, and all that interferes with this primary fact must be thrown out. To this the individual must consent in order that he himself may have life at all. In fact, in this primitive social order the individual scarcely may be said to exist; he gets his whole significance from the existence of the group. Without the group he would not be able to exist or to signify. The long story of education is the story of the gradual emergence of the individual as having significance in his own life and right."

³ In his *Democracy in Education*.

But we must face the plain truth that some individuals never emerge and demand a unique life and right that shall have significance. They do not develop beyond the point of acquiring habits. They cannot be initiated into the reason why. For them, habit formation in the larger sense represents the limit of educability. The point is not that for these individuals we should stop with habit. The thesis is rather that *for these individuals we should enlarge the scope of habit as a method of education*. We should equip them with more habitual responses to the situation of life than is necessary for more highly endowed persons. For their benefit we should simplify the business of living and replace difficult points requiring decision, with previously acquired habits. We should equip them, as far as possible, with standardized behavior. In primitive society habit was a social need for all. In modern society, it is a psychological and pedagogical inevitability for some.

Lower intelligence requires enlarged scope of habit— We have already stated that habit as a means of education precedes reason, both historically for the race, and psychologically for the individual. We undertake to equip the child with habits long before he has developed sufficiently to demand and be told and to understand the reasons for things; to make decisions for himself. What are these habits that we transmit? They represent such automatic responses to situations as we know to be useful and acceptable in our society. They are by no means as numerous as were the responses mastered in a primitive society in which very little scope indeed was provided for individual self-direction. Modern life is characterized by a minimum of these necessary habits, although, taken by

themselves, they represent a much larger and more complicated set of *mores* than most of us at first imagine. Convention, custom, manners, are not the least powerful motivating influences of our daily lives.

But it is exactly characteristic of the lower intelligence that it becomes confused with the increasing complexity of our relations and institutions. It is quite literally true that the higher and more complicated the machinery of living the greater, statistically speaking, the amount of dullness developed. Many a person, equipped with a given quantity of intelligence, might be regarded as normal at certain social levels and subnormal at others.

For such individuals, then, an enlargement of the scope of habit, the provision of as great a number of automatic responses as possible to the situations of life, must be the staff on which they may lean. "The years of pre-school childhood," says Professor Gesell,⁴ "are forgotten, but they do not ever completely depart; they are registered in the organization of the nervous system, and there they continue to dispose and to predispose the latter-day individual. This is somewhat figurative language, but it is true to the modern dynamic concept of the mind which holds that every action is conditioned by previous action. Man is neurologically a bundle of neurone patterns, and psychologically a bundle of habits, complexes, and conditioned reflexes. The patterns and complexes which are first formed have a remarkable tendency to persist, particularly those which are highly colored emotionally and closely knit to instinctive tendencies. Such considerations, though broad and general, point to the unique educational potency of the pre-school period."

⁴In his *The Pre-School Child*.

Alfred Binet's great discovery consisted of the fact that mental retardation really means failure to develop. Mental defectives are children so far as concerns intelligence development. What is true for the pre-school age of normal and bright children may well apply to those who are physically older but mentally still comparatively young.

It is commonly known that feeble-minded persons, perhaps more particularly women, not infrequently find it possible to make their way to a rather surprising extent at certain social levels. While it should not be taken over-seriously, the reader's attention is called to the highly standardized, almost habitualized preliminaries of social intercourse. Does not the preliminary strategy almost always consist of comments on the weather? Would it not be possible to get through an evening of dancing, for example, with a number of stereotyped phrases about the weather, the temperature, the condition of the floor, and one's attitude toward refreshments?

There are degrees of "consciousness"—"If we approach the problem from the side of behavior," says Professor Bode, "we cannot fail to notice a marked difference between the activities of those beings which are credited with consciousness and those which are not. This difference is usually indicated by saying that it consists in the ability to learn, or to profit by experience. The lack of intelligence shows itself in the inability to modify or adapt responses so as to suit the needs of the occasion."

This distinction is too simple. We do not have on the one hand animals and on the other men. Men differ in their ability "to modify or adapt responses so as to suit the needs of the occasion." Some men possess this ability to so high a degree that they invent new responses and

change the face of the earth and the routine of our daily lives. Others have practically no ability to meet new occasions, and even for old ones they can only respond in habitual ways.

"Intelligence, or mind," to refer to Professor Bode again, "consists in the ability to adapt conduct to the needs of the moment. A high degree of intelligence, accordingly, means a high degree of flexibility of indeterminateness of response." He then proceeds to contrast mechanical with intelligent behavior. "As we go down the scale of animal intelligence, the behavior which at the upper end is relatively flexible and adaptable becomes more and more fixed and automatic. The lower down we go, the more rigid and unyielding the neural mechanism becomes. The nervous system becomes more and more of the single-track variety, so that an incoming nerve current is bound to issue in a predetermined response, with no possibility of being switched off as it goes along."

All of this would be acceptable were it applied to distinctions between people of varying degree of intelligence, rather than to a contrast between man and animal. *There is no such concept as "intelligent behavior,"* meaning thereby human behavior, any more than there is a concept, "animal behavior." If men differ in intelligence, then their behavior under a given set of circumstances varies in the degree of intelligence with which a particular situation is met. It is true that man has intelligence, that the race has developed by applying intelligence, that civilization represents the achievements of intelligence. But this intelligence is always the intelligence of the well endowed. *To the dull, civilization is a gift.* They never could have brought it into being. In so far as they are

to participate in it, they must meet most situations in predetermined ways. Their behavior must be of the "single-tracked" variety.

Higher intelligence requires enlarged scope for creativeness—In view of what has gone before, let the reader note this summary statement as to the current meaning of education, made by Professor Paul Monroe:⁵ "The meaning of education, as at present conceived, is found in the attempt to combine and to balance these two elements of individual rights and social duties, of personal development and social service. The meaning of education in the present finds its whole significance in this very process of relating the individual to society, so as to secure both development of personality and social welfare."

But the fact of the matter is that there can be no single concept of the meaning or function of education, because there is no single type of educability. While some children require scope for the development of "personality," others can and need only be prepared for their potential "social service." It may be useful to think of consciousness, a human trait contrasted with that on which animal life and behavior are based, as awareness. The fact of the matter is that persons vary in the amount of consciousness which they possess, the degree of their awareness. The child surely emerges gradually from an animal state of no consciousness until he arrives at full maturity.

If differences in intelligence as to-day tested mean anything, they mean differences in educability. These differences in educability are doubtless in turn represented in differences of the degree of consciousness which the individual is capable of achieving. Some persons are ex-

⁵ In his *A Brief Course in the History of Education*.

traordinarily alert. They respond actively, aggressively; they enter their inheritance of civilization, culture, art. They begin early and seem avid for life. Others remain long in the veiled state of infancy, and, as they emerge from non-consciousness, they become aware of very little that surrounds them. They find it difficult to respond to stimuli beyond the physical. Far from undertaking to reform their environment, to reshape life, to add to its beauty and complexity, to its physical, moral, and esthetic achievements, they find it impossible to master that which has been attained and is ready to be handed down. They are not keen, they are not fully awake, *aufgeweckt*, as the Germans say; they are not aware of much of their surroundings; they are not alert; they are not high-strung.

We have endeavored, approaching a new point of view somewhat crudely, it is true, to assert that consciousness as a distinguishing mark between animals and men is not a simple or a single concept. Men differ in the degree of their coming into their own as members of the human race. As between the two great types of behavior, action on the basis of habit and action on the basis of reason, the lower intelligence is much more capable of acquiring habit than rich in that flexibility and adaptation that underlies reason and decision, the meeting of new situations, not to mention creativeness.

Education, basing itself on this psychological fact, should be differentiated. For the least highly endowed, habit should be emphasized. For them the scope of habit should be extended to the utmost possible degree. Their independent existence in our complicated society depends in part on the possession of prepared responses to as many

situations as possible. For the highly endowed, on the other hand, habit should be minimized. The number of habitual ways transmitted should be the lowest consistent with their preparation for living in our society, bearing in mind those useful habits which become second nature and relieve the individual for higher functioning. Belonging as they do to that group which has created our civilization and enriched our lives by the development of new ways, through the possession of "divine discontent" and the constructive imagination which remakes the world, attention must be continually directed toward giving them scope.

These children should, as far as possible, be released from the bondage of habit. In their case, every habitual way of doing an important thing is, potentially, a preventative of the discovery of a better way. The higher up we go in the line of intelligence, the less rigid, conventional, uniform, should be curriculum and method. When we reach the child who is a prodigy, absolute individualization is in order. Reversing our vantage-point, we may say, thinking in terms of the distribution of intelligence, that education at the highest level should be absolutely individualized and at the lowest as completely conventionalized. Between the two extremes will be found that combination of convention and deviation therefrom which governs the lives of most of us.

The two chapters which follow will be devoted to a specific application of the central principle that we have endeavored to establish. This chapter will close with still another example of the basic idea. There has come into industry in recent years a movement which has gone by the general name of efficiency management. Basically,

this movement always implies, for any industry, a highly standardized method of doing any piece of work such, for example, as the laying of bricks, with which the movement first achieved fame. The efficiency expert studies the process involved, carefully develops the one most economical series of operations, and then undertakes to have the worker accept this series of movements to achieve the result. On paper it can always be shown that the standard method, if adopted, will increase production. In practice there has been considerable difficulty. In certain industries the workers have deliberately set themselves against the invasion of the efficiency expert.

Careful investigations would probably disclose that for the dull the method is excellent. Given good habits, they will produce more goods and suffer not at all. Who has not seen a man or woman contentedly performing a simple operation throughout the working day which, so it seemed to the onlooker, might drive one mad. For the very intelligent, the efficiency movement is an impossibility. They resent it as humiliating and degrading. It deprives them of individuality and self-expression. With them it goes counter to all those fine and important qualities which have created our civilization. Certain industries, which require workers of considerable intelligence, never will adopt it.

Side by side with the efficiency movement, one will find, in the great industries, laboratories for developing new processes, for inventions, for improving a given article or lowering the cost of its production. Here we find, naturally, an entire absence of standardization. For the highly endowed worker, these shops must be a very heaven of delight. The inventor, absorbed in his efforts

to find a better way of doing a given thing, is no more likely than the poet or painter to note the flight of time.

If this picture of industry seems natural and right, then differentiated education on the mental level should not appear as outrageous. Those men and women whose vocational capacity will be taxed by the performance of the simplest of operations in a standard manner will not in the field of citizenship, recreation, or other endeavors, exercise extraordinary and unique individuality. They will be well served by the school if they are prepared to meet life's situations on as extensive a scale as possible with the least amount of friction. Those, on the other hand, who have some means of enriching life and carrying forward the culture of the race, had better be discovered early and trained in an environment and by a method best calculated to foster the development of their gifts.

IV. Summary

We have undertaken, in this chapter, to approach the problem of differentiating education for the various intelligence groups, more particularly for the super- and the sub-typical. After noting that for reasons based on American school organization, as well as considerations of maturity development, it would not be practicable to shorten the pre-high-school period either by earlier completion of elementary school work or by the introduction of secondary school subjects in the elementary school curriculum, it became clear that variation merely in the rate of progress was of little value.

Not only did we find that varying the rate of progress over the same course of study was not differentiation; we found, too, that it is not practicable to differentiate

the established curriculum objectives, since, from their point of view, identical ends must be aimed at for all.

The means of achieving these ends will, however, differ in accordance with the degree of intelligence possessed, and from this fact we took our point of departure. Tersely stated, the meaning of all of these considerations is that *differentiation must be primarily qualitative rather than quantitative.*

What shall we mean by this qualitative differentiation? Our answer is derived from the consideration of two facts which may be briefly summed up as follows:

(1) Men meet situations in two ways, by habit and by reason. The second of these ways presupposes the ability to adapt conduct to new situations. Society carries forward what has already been achieved in the one way by transmission, and rises to new heights by the other, through the inventiveness, creativeness, initiative, and aggressiveness of certain of its members.

(2) If the intelligence test measures anything, it measures the capacity of the individual in each of these mental abilities. This is what we mean when we assert that the test measures educability. The ability to acquire habits involves less intelligence than the ability to acquire reasoning power and to originate new ways, as is demonstrated by the fact that lower animals and very young children may be taught habits. In one sense, the distribution of intelligence means the distribution of capacity in a hierarchical range, from that required to form a simple habit to that required to make the most difficult of inventions, to develop the most statesmanlike policies, to compose music or poetry, to create meritorious works of literature, architecture, or the graphic arts.

All persons who are to live on an independent basis in our society require some basic habits. These habits aside, it would seem that those possessed of the least intelligence would be best served by the acquisition of habits covering as wide a range as possible in order to meet as many of the situations of living as can be met by habitual response. On the other hand, we should, for those having the highest amount of intelligence, reduce habit and convention to the necessary minimum, and foster in these children that creativeness and originality on which their contribution depends.

A concrete application of this central principle specifically to the problem of the education of the super- and the sub-typical is left for the two chapters which follow.

CHAPTER VI

THE EDUCATION OF SUPER-TYPICAL CHILDREN: THE SPECIFIC APPLICATION OF A GENERAL PRINCIPLE

I. Carrying On and Carrying Forward

We have, so far in our discussion of the problem of the education of mentally exceptional children, found that innate capacity can be measured, that differences in this capacity exist, and that it is practicable to classify children into three groups for purposes of instruction and administration. But measurement and classification on the basis thereof, inevitable as these processes are before anything further can be accomplished, cannot in themselves be regarded as differentiated education. Some school systems seem so to regard this procedure, relying particularly on the fact that the brighter children are in this manner enabled to go over the same ground more rapidly than their fellows.

But we have endeavored to show that varying the rate of progress over an identical course is not differentiation. In an effort to discover some point of departure for really qualitative differentiation, we have tentatively set up what might be regarded as a hierarchy of types of behavior, each requiring more intelligence than its predecessor; namely, the reflex action, the instinctive act, the habit, the exercise of reason. We have endeavored to show that as man differs from the lower animals by the

fact of his ability to go further down the line of this series of increasing complexity, so men as between themselves differ in this ability. Some may perhaps find it difficult to acquire even rudimentary habits which have been devised by their ancestors and approved by society, while others, examining the applicability of these habits to the end to be accomplished, challenge their utility and undertake to devise better and more suitable ways for reaching desired ends. And so we have the range from idiocy to that highest creativeness frequently referred to as genius.

From the point of view of educability, and it is in the degree of educability that we must consider these children as differing throughout this discussion, the last two of our steps, i.e., the acquisition of habits and the exercise of reason, may each be roughly divided into two phases of difficulty. In the field of habit it is possible to distinguish the difference between habits of action, such as we teach to children and such as low intelligence can acquire, and habits of thought and explanation, such as primitive societies transmit as their morals, customs, religion, ritual, and philosophy—the explanations of their world. At the next step, too, we may distinguish between that exercise of reason which enables one to acquire knowledge that is not necessarily on a habitual basis, such as factual information, and that exercise of reason which requires abstract thinking, analysis, and critical examination.

It may make for clarity to set down, side by side, in their order of increasing complexity, the mental types as established by psychological nomenclature, the types of educability as we have conceived them, and the types of education that we have suggested. The reader is warned that there is no warrant in the present status of psycho-

logical or educational science for establishing points of relation between these three columns. If the hypotheses on which these formulations are based should prove to be correct, then points of correlation will hereafter be experimentally established. Overlapping will, however, always exist.

<i>Types of Intelligence</i>	<i>Order of Inherited Capacities to Learn and Develop</i>	<i>Types of Education</i>
Idiot Imbecile Moron Sub-typical Typical Super-typical Prodigy	Reflex Instinct Habit of action of thought Reason Comprehension Contribution	Habit alone Habit predominantly Habit and reason Reason Predominantly

One might have sufficient ability, and that characterizes most of us, to inherit that which we have received, to carry on, and yet lack the ability to carry forward. The difference between the ability to carry on and that to carry forward marks in all likelihood, the line between typical and super-typical. In some small degree, at least, all members of the super-typical group, given the opportunity, are able to make changes for the better. This they are, as a matter of fact, doing from day to day. If civilization depended on the lower eighty per cent of the population, it would tend to remain *in statu quo*.

It is in the character of the differences which we have endeavored to point out and to analyze that we have tried to find a point of departure for educational differentiation. Doubtless the typical group extend well down the hierarchical line of behavior, perhaps penetrating, within the scope of certain fields of activity, to the power of

creative ability. On either side of this dividing line represented by the typical group, we find lesser and greater ability. Where we have less ability, it would seem that we should enlarge the usability for the purpose of living or that type which the child possesses, i.e., the ability to acquire habits. The sub-typical need more habitual ways of meeting life situations than do the typical. For them life should be automatized to the highest practicable degree.

On the other hand, some children have more than typical ability. For them, excessive habituation may tend to crush that creative ability on which the progress of the race depends. For them the scope of habit should be reduced and the scope for original thinking enlarged. This is the general principle which we must try to apply more specifically in this chapter in an effort to establish definite principles for the education of the super-typical.

II. Specific Principles for Differentiation

I. More thoroughness; more depth; more quantity—

It may be as well to begin with the most obvious of the principles, the one that becomes apparent as soon as the super-typical have been segregated in a special group for instruction. Their type of mind is such, the character of the habits of thinking and work which they have established is such, that in the nature of things, without any special provision or special planning, their work will be more thorough, more deep, more masterly, less superficial. They will quickly see the applications.

"It was found, in our experimental room," says Dr. Henry, describing an experiment in the pedagogy of

gifted children,¹ "that the children often knew much of the matter ahead of them in the course of study, and this made it possible for that material to be passed over rapidly. Especially did this happen when a new volume in a series of textbooks in the same subject was taken up."

Dr. Henry feels that even in following more or less closely the standard course of study additions might be made by adding "a considerable quantity of outside material of a cultural nature, much of which might well be supplied by the pupils themselves. This added material might include, among many others, such things as extended supplementary reading of standard literature mainly for appreciation; dramatization, pageantry, free discussion of the important topics in the news of the day, the collection of newspaper clippings correlating with the work in civics and hygiene, the illustration of history and geography with such relics, costumes, utensils, etc., as are available or can be procured, especially those which the pupils are able to bring; enrichment of the work in history by some consideration of industrial history, study of local city and state industries in connection with the work in geography, and so on through a long list."

It is necessary to keep these children alert, occupied, at work. While we are dealing here with children, it seems decidedly interesting to note that right through college the work is markedly thin for those who are most highly endowed. It is true that to some extent the school becomes increasingly selective. There is an intelligence status which, though normal, would find it impossible to

¹ See *Nineteenth Year-book*, Part II, of the National Society for the Study of Education.

graduate from a standard high school, and another which would find it impossible to graduate from college. But we pointed out in a preceding chapter that our unitary system is lowering the general standards, is ruinously establishing mediocrity, is substituting the work that the typical can do for that which the highly endowed should do.

It would seem ludicrous to insist that the idea of differentiation should be carried into the college except perhaps in so far as the courses or schools or degrees are selective, but it is, nevertheless, a tragic reflection that our economic prosperity which enables us to support youth in large numbers at leisure to a late age, and our unitary system of education which automatically lowers the standards right along the line, should be depriving the most highly endowed of opportunities on which their own welfare as well as that of society depends.

More thoroughness, more depth, would seem to imply as well more actual quantity. Listen to these two men as they look back on their college work and compare what they have to say, with standard college curriculum requirements. "I read English literature," says Ludwig Lewisohn,² speaking of his college days, "with white heat of passion; the lamp in my bed-room burned dry night after night. By the time I was nineteen I had read and re-read and pondered all the great things in English literature from Chaucer to Kipling, and I had read many authors of the second and third rank—Jonson and Donne, Marvell and Crashaw, Herrick and Vaughan, Prior and Gay and Tickell, Collins and Smart, Crabbe and Cowper and Hogg, even Bowles and Lloyd, Patmore and Freder-

² In *Up Stream*.

ick Tennyson, Clough and Beddoes and Locker-Lampson down to Lang and Austin Dobson and, of course, the immediate contemporaries.

"Yet these names are but a few and written down at random. The works of the great poets, even of those who like Landor are aside from the beaten road, had entered into my very being. . . . I have had little time to read English poetry of late years. I do not need to. I dip into my memory and those immortal numbers sound upon my inner ear! The early books and the seventh of *Paradise Lost*, the *Epistle to Augustus*, *Adonais* and the *Nightingale Ode*, *Kubla Khan* and *Work Without Hope*, *Tintern Abbey* and the *Ode* and the *Sonnets*, *The Lotos-Eaters* and *Ulysses*, *The Last Ride Together* and *A Grammarian's Funeral*, *Thyrsis*, and *The Scholar Gypsy*, *The Blessed Damozel* and *Jenny*, *A Forsaken Garden* and the elegy on *Baudelaire* and the long, dreamy, murmuring melodies—like the wash of a summer sea—of *The Earthly Paradise*. . . .

"In prose I was not so well grounded. But I knew the greater prosemen of the eighteenth and nineteenth centuries, especially my old favorites Swift and Johnson, and the object of my latest and deepest enthusiasm in college, Matthew Arnold, reasonably well and the novelists from Fielding to George Eliot intimately. And I had read all the histories of English literature available and dozens of volumes of critical essays and most of the chief biographies from Boswell to Lord Tennyson's life of his father. Once, when my eyes were being treated, my mother read to me the whole of Dowden's *Shelley* and of Trevelyan's *Macaulay*."

"I was near the end of my senior year," says Upton

Sinclair,³ describing the dull and unstimulating atmosphere of his college life, "but my store of patience gave out, and I presented a letter to the faculty, stating that I was obliged to earn my own living, and requesting that I be allowed two months' leave of absence. This statement was strictly true, but the implication, that I was going to spend the two months in earning money, was not true; I spent the two months sitting on the bed in an eight by ten hall bedroom in a lodging-house, reading Shelley's poetry and Emerson's Essays and the prose of Ruskin and Carlyle. I went back to college and made up my lost months in a week or two, and passed my examinations without either credit or discredit—ranking just in the middle of my class."

More than one highly endowed child has played truant in order to sit down somewhere with a book and really live on the intellectual level. More thoroughness, more depth, more taxing quantity, become an apparent need the moment segregation occurs.

2. **More scope; additional activities**—But greater thoroughness, greater depth, and more quantity within any given field of study will not satisfy the avidity of the alert, aware mind, of the group with whom we are dealing, as a study of their acquirements will show. We need more scope, additional lines of effort, and these without invading the work of the secondary schools, for reasons which have heretofore been indicated. What the character of these additions should be will not be so readily agreed upon as the principle that additions should be made. Each reader will have ideas of his own, and agreement among educators will not be reached for some

³ In *The Goose Step*.

time to come. The writer desires, by way of a contribution to the discussion rather than with the intention of being dogmatic, to suggest three fields, i. e., stenography and typing, instrumental music, foreign languages.

A brief word of defense: The main point under consideration here is the fact that we have at our disposal excess time and energy which may be used for the child's best interest, without invading the secondary school. Stenography and typing, for which the typical group can hardly spare the time in the elementary school years, and which they can take up later only for vocational ends, can be of the greatest use in the later life of the individual. These abilities are modern time-saving devices which, because they depend so largely on skill, are best acquired in youth, and their possession will prove of inestimable value in many of the vocations and avocations in which the highly endowed are likely to engage.

Instrumental music and foreign languages are additional abilities of untold potentiality for enriched living, particularly for those of high endowment, the acquisition of which consumes time and energy without infringing on the secondary school curriculum. The well endowed children of the wealthy enjoy these privileges to-day. Our democracy should mean equality of opportunity for all. Those who have the ability to avail themselves of the privilege should be allowed to share in the heritage of the race.

3. **Early introduction to the arts**—That curriculum objective which is conveniently referred to as preparation for the worthy use of leisure, means, for the most highly endowed, an introduction to art. The significance of art, at the highest adult mental level, is that it is

play, recreation, release from the humdrum and the duty and obligation of daily living, as well as from its drudgery and tragedy, its narrowness of scope—a release by way of the imagination. The highest art is essentially intellectual. While its end is emotional, the catharsis of the Greeks, this end cannot be purchased except by the method of training which involves the intellect. One requires considerable knowledge of the technic, and actual training in hearing, in order to listen appreciatively to music. One requires training in the rudiments of color and design and in the ability to perceive technic, and this quite apart from a certain intuition, in order to enjoy the graphic arts. These things seem to be more or less obvious in the field of literature, but evidently not so clear in the other arts.

To enjoy art at the highest level one requires intellectual capacity as well as emotional capacity, but these alone are not enough. Training is essential. If art at its highest is reserved, and it is so reserved, for those who have had the fortune to inherit a certain degree of capacity, then it must be clear that a school maintained especially for the education of the super-typical will pay special attention to the introduction of these children to the play of man at its highest, that release and supreme recreative agency, that goes by the name of art. We have so far been dealing with art appreciation. Participation in creating we shall take up later.

4. **Reasons, not rules**—If we are correct in our contention that for the highly endowed the transmission of fixed, habitual ways should be reduced to a minimum, then a maxim of their education, both in method and in

material, will be that we should minimize accepted, standardized, traditional, fixed ways of achieving ends, and, so far as possible, throw these children on their own resources.

Upton Sinclair recalls with resentment and very little sentiment the violation of this maxim in his own school career—the insistence on rules without explanations, and dealing with children in groups regardless of variability within them. “If you wanted to divide one fraction by another,” says he, you turned the second fraction upside down; it seemed an odd procedure, but if you asked the reason for it, the teacher would be apt to answer in a way that caused the other little boys to laugh at you—something which is very painful.”

Generalizing from introspective recollection, as so many of us are apt to do (hence the flood of pessimistic literature from the pens of unprofessional authors on the sad state of education), Mr. Sinclair comes to the conclusion that things were very, very bad. He naturally does not know that there were very few other little boys in his class to whom it seemed an “odd procedure” and who “asked the reason for it.” To the student of education it is obvious that the method employed is the exclusively useful one for a certain proportion of the class, that for others a very meager explanation will suffice, and that a few are necessarily sacrificed to the unitary system of instruction. In a mixed group the instruction must of necessity be directed toward the center of ability. Where special attention is called for, the end aimed at, in the nature of things, must be skill in the division of fractions. Since Upton Sinclair achieved this skill easily

enough, his teacher could little afford the time to make explanations. She was busy giving the dullest member of his class the mere skill.

When, however, we begin to deal with segregated groups, and personality crops out, we must count on it. We must diminish the method of routine, the drill, the herding of children. We must count with personality, with individuality. It is therefore very helpful indeed to listen to Mr. Sinclair so that we may learn to do better: "Everywhere you went in this school you formed in line and marched; you talked in chorus, everybody saying the same thing as nearly at the same instant as could be contrived. . . . The teacher would give out a series of problems in 'mental arithmetic'—tricks which you had been taught, and you wrote the answers on your slate, and then marched in line past the teacher's desk, and if you had done it according to rule, you got a check on your slate.

"You learned the great purpose of life was these 'marks.' If you got good ones, your teacher smiled at you, your parents praised you at home, you had a sense of triumph over other little boys who were stupid. You enjoyed this triumph, because no one ever suggested to you that it was cruel to laugh at your weaker fellows. In fact the system appeared to be designed to bring out your superiority and to increase the humiliation of others. In this school everything had been conveniently arranged in packages, which could be stowed away in your mind and made the subject of a 'mark.' Columbus discovered America in 1492; the Declaration of Independence was signed on July 4, 1776; Switzerland was bounded on the north by Germany.

"This business of 'boundings' appeared in little dia-

grams; Switzerland was yellow and Germany was pink, and no one burdened your mind with the idea that these spots of color represented places where human beings lived. At this same time the little boy was going to Sunday school where he learned something called the 'creed,' with a sentence declaring that 'from Thency shall come to judge the quick and the dead.' The little boy pondered hard, but never made sure whether 'Thency' was the name of a person or a place."

5. Time-consuming in place of time-saving methods—The methods which we have been describing require time. The division of fractions can be more rapidly taught by rule than by reason. But time is the very thing which the super-typical child has in abundance. He learns rapidly, and yet we know that it is to his great disadvantage to be rushed into high school and into college before he is mature enough to take advantage of these opportunities. Efficiency is a word which has recently crept into educational literature, as so much else is apt to do from those overwhelming modern activities, commerce and industry. But in the field of education efficiency may have a very dangerous sound. The super-typical child can afford time-consuming in place of time-saving methods, and he needs them for his development.

Processes themselves have educational values as well as ends. Every one knows the superiority of assisting the child to find things out over "telling" them to him. Reading a book is better than reading a summary of it. Information secured for oneself slowly by means of excursions and personal investigation may be superior to the summaries and abstractions of the texts. The schools

are beginning to recognize these educational facts. The problem and the project method, just coming into favor, involve excursions, investigations, and numerous other roundabout ways of achieving results. But the processes themselves have educational value. Super-typical children can afford the time to take advantage of these values.

6. **Foster the creative impulse**—"Variability of the stock," says McDougall,⁴ "would seem to be a necessary condition of the production of the persons of exceptional endowment without whom a nation can neither rise in the scale of civilization nor maintain a great position." But as we have tried to indicate, the mere possession of potentiality is not sufficient. It is possible to submerge and thus to lose great potentiality, except such as may survive through the operation of accident. It is a fact that throughout the vegetable and animal kingdoms variability is the great asset on which progress depends.

To take advantage of this precious social asset, we must, in the case of the super-typical, foster the creative impulse. We have too long confused the process of education with that of learning. We have too long looked at knowledge rather than at scope and development as the goal of education. We must become conscious of the danger of interpreting in too etymological a sense the function of the teacher. Almost all of our traditional methods of instruction are inapplicable to the super-typical group. *Not teaching, not training, not transmission, not the imparting of knowledge, are here in demand.* Rather do we want deliberately to foster new modes of

⁴ In his *Is America Safe for Democracy?*

attack, different ways of achieving ends, and, in matters of art, creativeness.

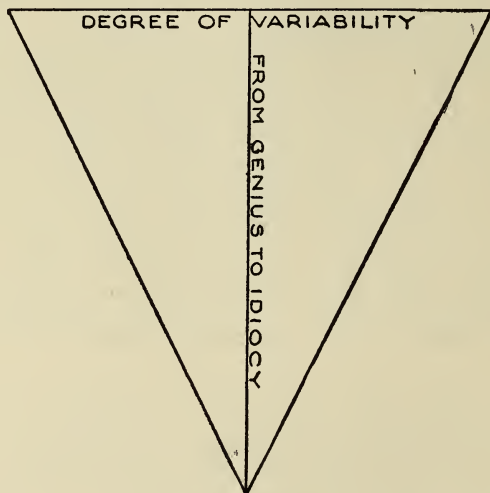
If it is upon this group of children that their generation will rely for guidance, then they should be given opportunities to develop toward their future function. The teacher who guides these children in drawing, music, or literature will continually be aware of the desirability of allowing them to compose music, create original design, write verse and fiction.

In every field of educational effort analysis will come into play. In the social sciences the fact that institutions are not necessarily static will be made evident, and the children will be given opportunity not only to master the past but to examine institutions with a view to their suitability for the future. It is in this group, to borrow a fine phrase from Willa Cather, "that we may hope to find young talent which will challenge the pale proprieties, the insincere, conventional optimism of our art and thought."

As one studies the works of the educational theorists and philosophers from Rousseau to Dewey, one is inclined to dub them educational dreamers, for their theories, we dare assert, are not practicable. For the entire population they cannot be put into practice. But the attentive layman, particularly he who is keenly dissatisfied with his own school memories, or who observes the poor opportunities which the school seems to offer to his well endowed children, hurls himself against the vast inertia with his *Shackled Youth*, or her *Letters to a Schoolmaster*. Yet the moment we think in terms of a selected group, these theories and these discontents become illumined. It is true that for a selected group pres-

ent opportunities are painfully inadequate. To a selected group the theories are admirably applicable.

The philosophers, and the critics, too, reason introspectively. They look into their minds and then they generalize. But variability, individuality, special aptitudes to be cultivated, occur at the top, not at the bottom. Let the reader imagine that in the inverted triangle below,



the vertical line represents the quantitative, and the base line at the top represents the qualitative, variation in intelligence. It is at the top that one finds Aristotle and Shakespeare and Beethoven. They are not alike. They are highly differentiated, individualized. As we go down the triangle toward the bottom, the degree of variation narrows, until we reach the point where typical literature as exemplified in a popular journal, and typical humor or drama as represented by a popular circuit, and

typical editorial wisdom as represented by a popular syndicate, will receive the assent and support of vast multitudes. At the very angle, there is no individuality left at all. Mongol idiots are all very much alike.

It is only with these facts in mind that we can read sympathetically and, indeed, approvingly, such sentiments and aspirations as these of Dr. Neumann: ⁵

But in the meanwhile let us not blink the fact that most of our product in books and newspapers, in magazines, in song and drama, and not least, in our political and ethical opinions, bears the mark of being turned out ready-made to meet a uniform and not over-critical demand. We have not yet learned the important truth that equality must not imply sameness in thinking, acting and feeling.

As against the uniformity idea, we need the reminder that culture is best in the measure that it diversifies the minds which it touches. The cultivated man becomes the more genuinely educated the more true he is to himself instead of duplicating other minds. He is saved from isolation and eccentricity by the circumstances that the truest living is a matter of right relationship with other and diverse personalities. A nature which is genuinely original, like Michelangelo's or Beethoven's, proves its vast difference from mere freakishness by its gift of provoking productive originality in other men. America's culture will come to grander fruitage when originality is encouraged, not solely or chiefly in business but in all fields of endeavor.

7. Discover and develop special aptitudes—The counsel to stimulate and to exploit the creative impulse is, after all, merely a counsel of general method. The creative impulse itself is not general. In many of the highly endowed, it means the possession of a special talent such as has so frequently been seen in youthful musicians, painters, and poets. The aim of the school must be to

⁵ H. Neumann, *Education for Moral Growths*, New York, Appleton, 1923.

discover and to foster special aptitudes, an aim more easily set down than put into practice.

How to search out and to foster special aptitudes can at the present time not be told by setting down rules of thumb. While we are accumulating a literature of "guidance" both educational and vocational, it is to be feared that in any sure, objective, scientific sense, the blind are in this matter still leading the blind. Neither psychology nor pedagogy has established a procedure. Some laboratory tests for aptitude have been devised, but it is to be doubted whether these really measure "musical talent" or talent in other fields. The intelligent and enthusiastic teacher will feel, particularly if he has background as well as intelligence and enthusiasm, that he can in some measure determine aptitudes. One feels, too, that broad exposure of a highly endowed child to as many stimuli as possible will help to indicate his bent. Further, it does not seem possible to go at the present time.

8. **Social adjustment**—We come, finally, to a subject that can be overlooked only at risk to the highly endowed child. There is always a feeling of timidity in undertaking the special development of highly endowed children, a fear that they may be made "queer." While we have, in our recent educational discussions, been minimizing the importance of this matter, the fact is that history and some more specific research, too, indicate that this fear is not entirely without basis in fact. The end primarily in view, in our discussion in this chapter so far, has been the social value to be derived from the maximum development of high endowment. But it is a fact that when we emphasize the individual traits, when we deliberately offer scope to the unconventional, we are edu-

cating away from the group and in that way creating for the future of our pupil a grave problem of social adjustment.

The group resents deviation, superiority, aloofness, the challenge of the folk-way. A casual perusal of history enables one easily enough to list the names of the benefactors of mankind who were without honor in their own lands and their own generations. The ultimate acknowledgment of history has its disadvantages, so far as the daily life of the individual is concerned. It must be fairly difficult to be told, as we remember from our elementary school history Aristides was told, that one of the holders of the Athenian franchise had grown tired of hearing him called "the just."

But, interestingly enough, we have more accurate data than general history to back our contention. Haverlock Ellis, on the objective study of the biography of men of genius after these men had lived their lives, finds ⁶ that "the attitude of the world toward the man of original intellect is not merely one of disdain or indifference, but constantly tends to become aggressive. . . . It is practically impossible to estimate the amount of persecution to which this group of pre-eminent British genius has been subjected, for it has shown itself in innumerable forms and varies between mere passive refusal to have anything whatever to do with them or their work, and the active infliction of physical torture and death."

The uneasiness, then, about endangering the social normality of highly endowed children is well grounded. We must try to equip them with social habits and a philosophy of life that will enable them to get on with their

⁶ In his *A Study of British Genius*.

kind. They must, when all is said and done, learn to live in the world of the typical. "For the intellectual," says a writer in *The Nation*, speaking under the apt caption: "Man and Folk," "remains a man. He has all the biological, all the atavistic urges. He wants the comfort of being at one with his folk, of acting, at times at least, out of folk-instinct, communal passion, of being leader rather than rebel and martyr. . . . All the while he suffers, unless he has a divine Miltonic arrogance, or a Goethean serenity, from malaise and homelessness." He must "build up a philosophy which will permit him to act with his fellow-men without wholly destroying the honor of his mind."

III. Corollaries

Selected teachers—It hardly seems necessary to point out that it would not be possible to establish differentiated education along the lines we have been indicating, and yet leave the school organized as it is to-day. Many things must be clear to the reader who has practical knowledge of the American public school. Frankness compels us to recognize, for example, that we shall have to make special selections from the teacher group in an effort to find those who by personality, endowment, and training are peculiarly adapted to work with super-typical children. If the psychology of individual differences has any basis in fact, then it is true that every teacher, be he in the elementary, the high school, the college, or the university, will have in his classes every year students of greater potentiality than his own. If this is true of the unselected population, what shall we say of the need in the teacher who is to lead a deliberately selected group?

Differentiated text-books—But other consequences are equally clear. Our present books, like our present teaching, are directed toward the center. When we have segregated our children into ability groups, the text-books, whether they be readers or history, geography, or arithmetic texts, will immediately become, for the super-typical, hopelessly inadequate.

Different equipment—An entire rearrangement of equipment will be in order. One may readily leave these matters to the teachers of the highly endowed. One hopes, indeed, that the equipment will not be too soon standardized. Yet in imagination it seems possible to envisage the class-room of these special schools without the attached desk and other arrangements that speak so loudly of regimentation. One may envisage rooms with well filled book-shelves along the walls, with musical instruments, with portfolios containing representations of every type. One may in the mind's eye see studios and laboratories, and imagine expeditions into the world of nature and of social relations. For the first time in the history of education, practice is about to base itself on reason instead of tradition.

Experimentation essential—Finally, it must be clear that the establishment of sound and proved practice in this field will await careful experimentation and the accumulation of experience. The object of this chapter has been the establishment of general principles, a theory to serve as a point of departure, not a detailed procedure. Granting that our contentions are sound, much devoted work remains to be done toward the formulation of details as to practice in the differentiated education of super-typical children.

IV. Summary

In an effort to make specific application of a general principle, we have enumerated eight guiding principles for organizing the education of the super-typical which may be briefly summarized as follows:

1—Their work should be more thorough, more deep, and greater in actual quantity.

2—Additional fields of work should be opened up which, while enlarging the scope of the curriculum, do not invade the secondary school courses of study.

3—These children should, in a special way, be introduced to the arts.

4—Accepted, standardized, traditional, habitual, ways should be minimized.

5—Time-consuming methods should be deliberately employed.

6—The creative impulse, the tendency to vary and to challenge the established ways, should be deliberately stimulated.

7—Special aptitudes should be searched out, fostered, and developed.

8—The problem of social adjustment should receive careful consideration.

It will not be possible to put these principles into practice without the employment of special teachers, books, and equipment. Finalities in the field of procedure must await careful experimentation for which these tentative principles should serve as a point of departure.

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CHAPTER VII

THE EDUCATION OF SUB-TYPICAL CHILDREN: THE SPECIFIC APPLICATION OF A GENERAL PRINCIPLE

I. Fundamental Considerations

Differentiated education, as the teachers of the present generation are undertaking to face it, instruction organized on the basis of scientific selection and in special groups consciously segregated for different educational goals, and these goals formulated on the basis of acknowledged variation in ultimate attainment, is a new thing in the history of the public school. Our steps will necessarily be tentative. Much of our work will have to be undone. We are bound to make mistakes. We lack a central theory of proved value. We shall depend on experimentation. Every statement is to be taken as made tentatively, as a suggestion for further discussion and experimentation, and should be understood to be made primarily by way of hypothesis. With this caution we may proceed to a number of considerations.

"Do what you can, in any way that you can, go as far as you can, is a fair motto for our special classes." So reads the last and summarizing sentence of an address before a recent meeting of the National Education Association, made by the supervisor of special classes for retarded children in one of the largest American cities. No wonder that Dr. Doll asserts that "if we are candid, we must

recognize that comparatively little real progress has been made in the special class since ten years ago. . . . Where the special class movement had its former strongholds, we now find skepticism."

And yet the approach to this problem is certainly simpler than is the case with the education of the super-typical. Whereas in the case of the latter we literally do not know what experience may develop, we know in the case of the sub-typical that at the best we must look for less than the typical can achieve. Whereas in the case of the super-typical we must endeavor to create situations, experiences, and stimuli for the development of that creative instinct which changes, evolves, develops, carries forward, we know in the case of the sub-typical that they cannot receive in its entirety, and at its highest level, that which has already been created. Whereas in the case of the super-typical we must seek new ways for the development of the reasoning process, for the release from convention, we need in the case of the sub-typical, most of all, that well established educational procedure that is known as drill. In the case of these children, transmission to the limit of their ability to receive will serve our purposes quite well.

I. Mental age an unreliable determinant—One of the traps that lie in wait for those interested in the education of the sub-typical is the suggestion that we teach them that part of the curriculum which it seems possible for them to learn at their attained mental age. It is true that within any classification mental age should more or less determine the character of the work to be done. This factor will in the end of necessity determine the character of the work. But to say of the sub-typical group that any

chronological age classification of these children represents a lower mental age than would be the case with the typical group, and that in consequence a criterion of their education should be found in this fact, that they should be taught what typical children learn at this age, is to make no differentiation at all.

Much that is learned in early childhood is learned in preparation for something else, not for its own intrinsic value. Children are taught the rudiments of reading and number in order that these may be used in later stages as parts of more important processes, not for their own sake. If they could not go beyond the first or second reader, much of the effort would be wasted. To give preparatory work of any kind to children whose ultimate capacity is so limited that they can never go far enough to make use of this basic work, means waste.

Sentiment will for a long time make it difficult to part from some of our preconceptions, such as the vague belief in the value of academic subjects and of literacy, but we shall some day revise our opinions. That should be taught children which leads to something else. If the skill or habit or information taught does not lead either to immediate applicability in living, or serve as preparation for the acquisition of a skill, or habit, or information within the ultimate capacity of the learner, then the original acquisition is valueless and the time and energy spent in acquiring it represent waste effort.

Much time and money and earnestness are at present going into the removal of illiteracy in a vague and largely unfounded belief in the value of bare literacy. But when a grown man has acquired the ability to work his way through a primer, what will he do with it? Certainly

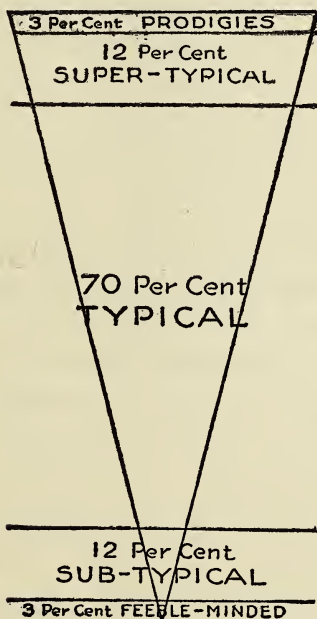
that degree of skill will not enable him to arrive at a well balanced opinion regarding the most desirable foreign policy for the United States.

2. **Less quantity**—In discussing the education of the super-typical we made a point of the fact that true differentiation consisted mainly in difference of quality, not of quantity, and could not be achieved by going over the standard curriculum in briefer time. In the case of the sub-typical we shall also claim that differentiation must be qualitative; yet it is a fact that in their case diminished quantity does play an important part—that they quite definitely cannot, because of ultimate limitations, acquire as much in quantity as the typical group.

The reader may recall that he was asked in the last chapter to visualize the distribution of intelligence by the use of an inverted triangle. Our ideas as to quantitative variation, as the reader will note from the figure, tend to be rather definite. In the matter of qualitative variation we are frankly suggesting a hypothesis, not a law.

In this triangle, intelligence varies quantitatively from top to bottom but, in addition, it varies qualitatively at any given point of distribution. At the base variation is very marked, and qualitative differentiation far outruns in importance mere additional quantity. As we approach the bottom, however, variation within any given intelligence classification appears to diminish in importance, and quantity as a measure of differentiation becomes, therefore, much more important. Put tersely, idiots run to type much more than do geniuses. In the case of the super-typical, therefore, additional quantity has some value, but qualitative differentiation is the most impor-

tant. In the case of the sub-typical, on the other hand, qualitative differentiation, particularly in the field of method, is of the highest importance, but quantitative differentiation, less material, is obviously an equally important and an inescapable factor. At the top quality



of mind counts most; at the bottom quantity of intelligence is quite a sufficient index.

II. Differentiated Curriculum Content

3. Behavior patterns: more extensive use of the psychology of habit—There is a type of inadequacy which comes about not because of a deterioration in the

individual but rather because of the increasing demands of the problems of living. Such inadequacy, says Professor McDougall,¹ "may result from the increase of complexity of the environment which accompanies the rise of civilization, which is, in fact, an inevitable and necessary feature of it. Without change of the essential qualities of a people, those qualities may become relatively inadequate to the support of its civilization, just because advancing civilization makes, with every step of progress, greater demands upon its bearers. . . . Our present civilization has surpassed all its predecessors in the opportunities for leisure and amusement, in the complexity of personal relations, in the variety of customs, traditions, beliefs, theories of conduct, with which we are brought in contact, all demanding on our part the exercise of a wisdom, a self-control, and a degree of devotion to moral ideal, such as no previous civilization has required."

From our point of view this all means that a given degree of intelligence is to-day less adequate for independent living in society than was the case two thousand years ago. As a problem for the school, it means the need of ways and means to make good as far as possible this decreasing adequacy.

There is one important way of meeting the situation. In so far as we can simplify life by providing the future adult with prepared automatic and semi-automatic responses with which to meet situations, in so far do we admit him to a greater share of living. It is a fact that an important proportion of morons can actually earn their own living in institutions. They have the innate ability, and they can be given the skill, to make themselves self-

¹ In his *Is America Safe for Democracy?*

supporting, but they cannot maintain themselves in our complex society which requires a large amount of planning, foresight, self-restraint, and dealing with one's fellows. It is a more interesting fact that a certain proportion of morons can earn their living outside of institutions under institutional supervision. This is the key to our problem. The dull normal can be prepared for entire independence by the elimination as far as possible of the need for complicated reasoning, and the substitution therefor of a comparatively large number of habitual responses—patterns of behavior with which to meet situations.

Let us illustrate the point. A normal but sub-typical person may be taught a trade, and may acquire the diligence and sobriety that will enable him to hold his job, and the ability to budget his income so as to provide for his welfare and leave a margin for future emergencies. But what to do with this reserve fund? Let the reader look over the alluring advertisements of some of the dailies of greatest circulation with their offering of marvelous get-rich-quick investments. Let him observe, on the one hand, the clever psychology of the promoters of oil and mine developments, with their assurance of wealth and independence, and on the other the amount of trained intelligence that would be necessary to analyze the situation, to pass on the reliability of the promoter, to investigate the legality and fairness of the type of security offered, and to resist the enticements of the advertisement and the salesman, playing, as they cunningly do, on that greatest of our weaknesses, the acquisitive instinct.

Let the reader look over the statistics indicating the

enormous amounts of money lost annually to these promoters—money which means surplus wealth accumulated over long years of continual self-denial and the exercise of other useful social virtues. Far better than “blue sky” laws would be habits grounded into the lives of certain portions of the population, habits that have become second nature, automatic to the point where the individual would simply find it impossible to act otherwise than in accordance with them.

What should be the behavior pattern in this particular situation? It should be that surplus funds belong in savings-banks or established insurance companies or in investments that must never be made except with the advice of the officers of the savings-bank. In social terms, this habit means that the sub-typical, being unable to pass on the complicated problems of investing funds, shall act in this matter only on the advice and through the medium of the presumably more intelligent portion of the population. Without this additional habit, the basic habits of industry and thrift will operate in favor of the clever but unprincipled promoter.

We have not tapped all the possibilities for education inherent in the laws of habit. “Habit,” as Dr. Goddard says, “has been the theme of orators and essayists, lecturers and preachers.” But we have not gone far enough. We have considered it as useful, to quote Dr. Goddard again, for the purpose of “turning over to our lower nerve centers the performance of as much of the routine of life as possible, so that the higher centers may be free to deal with new problems.”

But it is exactly in the business of dealing with new problems that the sub-typical are weak, and it is for the

purpose of replacing the need for solving as many as possible of these problems with suitable patterns of behavior or response that habit should be employed. While it is not true, as Dr. Goddard states, that "the deliberate forming of useful habits is the most important work of education," because there can be no single process of education where there are various degrees of intelligence to be educated, it is true that *for sub-typical children we must carry the implanting of habits further than it has ever been carried before*. From the point of view of these children it is very true indeed that "the business of childhood and youth should be the deliberate formation of useful habits," and it is fortunate that there is such a resource available in human psychology as will permit the implantation of types of behavior that will respond to a situation in the form of "an automatic or impulsive action or a group of such actions, so co-ordinated as to result in the performance of a more or less complicated act with a minimum of consciousness."

Commercial interests, so situated as to derive benefit from the formation of habits by the population at large, are well aware of the resources of the law of habit. "There is a reason" why a particular combination of numerals defaces the American landscape from the Atlantic to the Pacific. Most of us are continually being provided with the words to employ when we enter a shop to supply our wants. "Don't say air; ask for *youneedabreath*." Compliance with this insistent suggestion, the fate of most of us, means millions annually in the pockets of those who devise fancy names and containers for colodion and powdered soapstone.

Propagandists, to use the modern name for individuals

and groups who have always existed, persons and groups interested in having most of us think in their terms, are thoroughly well acquainted with the inherent possibilities of habit. All great loyalties, customs, observances, ways of doing things, implanted in youth by means of reiteration rather than conviction, are so many behavior patterns against which reason not infrequently hurls itself in vain. It is the psychological basis of all of this which we must apply to the education of the sub-typical.

We do not undertake, in this volume, to outline courses of study for the various exceptional types. The preceding paragraphs are offered as an example of the working out of a rather elusive and somewhat difficult general principle. It seems unnecessary to waste space in further elaboration. The reader may make his own applications to such problems as health, involving the avoidance of patent medicines and quacks, and to other of the curriculum objectives. At many points where the typical may be left to rely on discretion, the sub-typical will be better served if provided with habitual responses. Let the reader meditate on the function of proverbs, superstitious beliefs, charms, and formulas in the historic development of the race.

4. **Vocation, the basic objective**—The first essentials to living in our society are (1) the ability to render service of some sort which warrants the payment of wages, and (2) the judicious expenditure of these wages. In the matter of vocation, as in every other, the sub-typical person is at a disadvantage. Not merely does the lack of quantity of intelligence bar him from preparation for the higher and more skilled occupations; he lacks the imagination and the initiative to change his vocation or

his location, or to originate a business venture of his own. Michelangelo had great difficulty in determining which of his many gifts he should follow, but the unskilled laborer is given his instructions from moment to moment.

We have stated that the goals of education as outlined by various educational authorities cannot be differentiated. But the mode of attaining these goals will necessarily be different. This means not only that different types of intelligence will attain to different vocations; it means, too, that the relative importance of the so-called curriculum objectives may be different for the different groups. The objectives set down by the Commission on the Reorganization of Secondary Education, the reader will remember, are seven in number, i. e., health, command of the fundamental processes, worthy home membership, vocation, citizenship, worthy use of leisure, ethical character.

In dealing with the education of the super-typical, we undertook to show the vital importance of stressing such aspects as citizenship, worthy use of leisure, and ethical character. It is not intended to imply that these objectives do not possess value in the education of the sub-typical, any more than it was intended to imply that health, command of the fundamental processes, worthy home membership, and vocation, were unessential in the education of the super-typical. Rather is the point being made that differentiation consists of difference of emphasis of the various objectives and that, so far as concerns the sub-typical, vocation must be the foundation point. The reason for this may be given in a sentence. Without vocation as a basis for independent maintenance

in the social group, the other objectives will be valueless.

Attention may now be called to the fact that the beginning of training for vocation, as an element in education, is timed roughly in accordance with intelligence. The professions for which training must be sought at the universities, and which presumably require the greatest amount of intelligence and preparation, are commenced at the latest age. Other types of vocation may be acquired at earlier stages of development, progressively downward until we reach those which depend so largely on brawn and so little on brain that physical development is the chief factor in determining readiness to begin work.

This certainly ought to mean that the lower the degree of potentiality, the earlier, relatively, should attention be centered on vocation. Not only may the child of less potentiality be put at productive work earlier than the child who needs more time for preliminary training; the period of preparation for his own vocation should be as long drawn out as possible, and this serves as another reason for an early start.

While no pretense is here made to deal exhaustively with types of vocation to be taken up, while much will have to be learned by the application of scientific procedure and resourcefulness, while character of work undertaken will always depend in part on locality, it is, nevertheless, not uninteresting to note the efforts to find appropriate vocations being made in one school which evidently deals with the type of children here under discussion, the Opportunity School at Pasadena, Cali-

ifornia. The following extract is taken from the 1919-20 report of the superintendent of schools:

Home and School. What more wonderful task than to help a young girl to meet the problems of life with courage, enthusiasm and a knowledge of the principles involved, and yet how difficult! . . . The girls were divided into three groups, and each group was placed in a room which was arranged to resemble a library and living room. This room was their home; the responsibility for its home-like appearance is theirs. Each girl is a member of the family and is expected to help promote the welfare of every individual in the home.

Real economic problems were presented from time to time, such as the buying of a home, and the furnishing of it on a limited salary; the making of a yearly budget for a family of four. Schemes for artistic arrangement of colors and furnishings, so as to give an atmosphere of home, were also worked out. . . .

Cafeteria. One of the most successful features of the Opportunity School was the installation of the cafeteria this year. . . . Classes for both boys and girls have been conducted in this department, as it has been demonstrated that both sexes should be taught the elements of food values and combinations. No outside help was employed during the year, and we are fully convinced that the boys and girls of the elementary grades can take full charge of the work under their supervisor.

Commercial Work. A chance is given to the pupil to find out whether the commercial occupations will be to his liking. Special emphasis is placed on typing as a hand work, as a means to good English, and as a method of learning spelling. The same course as in the high school is given in bookkeeping, giving the pupil a chance to start the work and decide whether he has special talent along that line. Stenography is also studied by a few who think they would like such an occupation. Most of the work is along the prevocational line, finding courses, and is given the pupil as an aim in his further school course.

Household Arts. Courses in beginning sewing as well as various phases of advanced sewing and dressmaking have been taught in the domestic art department this school year. A

course in art needle work was organized in the fall of 1919. Great enthusiasm has been shown among the girls in the course in developing their appreciation of the artistic side of needlework and the fundamentals of designing in clothing. The renovating, dyeing and making over of old clothing have been taught on a more extensive basis this year than at any previous time, and very satisfactory and interesting results have been accomplished. Equipment for a class of twelve pupils in manicuring was installed in the fall, and this has been taught in the domestic art room. The object of this course has been to develop more pride in personal appearance, and also to give any girl who shows a particular liking for this kind of work the advantage of a vocational course whereby she may begin work in a shop at a minimum wage, rather than as an apprentice.

Manual Training. The Opportunity School has also instituted the project method in the manual training department with gratifying results. This method of attack upon the work has brought forth a hearty response from the pupils. It takes away much of the old formality of the subject and substitutes the real desires and needs felt by the pupils in their work. It creates interest. It has meant more labor on the part of the teacher, but the results more than justify the greater energy expended. We believe it inspires confidence in the ability of the pupil. The project method motivates the work, and causes the pupil to work towards a worthy goal.

Arts and Crafts. . . . Four hours a week were also given to commercial cartooning and poster work. Two periods were devoted to shoe repairing. The remainder of the time has been given to toy making, basketry and other productions in flat work. The rudiments of chair caning have been taught also. The cartooning is taken up by especially picked pupils of both sexes who have shown marked ability in this line of work. Two thousand toys were made this year in this department, some of which were sent to the different relief departments of Europe.

5. The other objectives of the curriculum—We must now reassert that the educational objectives other than vocation have validity for this group as for all other independent members of the community, but that they will

be attained at lower levels. Let us see what this means in practice.

The objective of health may, in the case of typical and super-typical children, mean a knowledge of physiology and hygiene—although even in their case habits have been found more effective—knowledge of such matters as nutrition, elementary sanitation, and other factors of individual and community welfare. In the case of the sub-typical the best results will be attained by the acquisition of habits and daily routine that lead to health. Every phase of personal cleanliness when made habitual; cleanliness of home environment when made a necessity by habit; well established food habits both in the matter of character and time of meals; training in play and in habits of exercise; and all of these habits acquired by drill and by doing, to the point where they become automatic, second nature, where they “do themselves” in response to an inner craving—these are some of the means for attaining the objective of good health.

What does worthy home membership mean in the case of these children? Does it not, in the case of the girls, mean primarily home-making ability? Fortunately two things are true: (1) sub-typical persons may become very competent home-makers, and (2) home-making may be largely transmitted through excellent habits. Gardening, shop work, hand and machine sewing, routine cooking, habits of order and cleanliness, can and should be acquired.

But these by no means complete the list of necessary abilities. The concrete application of the “fundamental processes” to the daily problem of budget making, to planning the family expenditures, to actual shopping,

to conservation of food and other materials, these are the abilities that will lead to comfort, quiet, happiness, and usefulness. It is notorious that in times of prosperity great proportions of the unskilled and semi-skilled who are unused to large incomes become dazed and make injudicious use of their opportunities to provide for the future. The practical use of the fundamentals for training in thrift, the meaning of savings-banks, and, more particularly, inaccessible accumulations such as are involved in the various types of life insurance, these surely are factors in worthy home membership decidedly applicable in the education of these children.

The objective of citizenship in the case of these children can hardly be attained by an effort to train for leadership, or even for co-operation in the abstract sense. It will be difficult for them to understand the complicated machinery of government. But the sense for law and order; the basic belief in government; loyalty to the constituted authorities; the need for cleanly, quiet, orderly neighborhoods; the propriety of supporting the public authorities in their efforts to improve the general well-being—these are traits of good citizenship that can be acquired by means of habit.

III. Differentiated Method

Vocation, then, should be the central core in the differentiated education of the sub-typical. But the method should be differentiated, too. The elements of this we have already indicated. Beginning with the reflex actions and instincts, the effort must continually be made to transmit to the child and make good in his daily living

that in which he is deficient. Typical children pick up hundreds of habits and bits of information and naturally possess hundreds of skills which, in the case of the sub-typical, may have to be taught deliberately. Many of the social habits which make life livable must be taught to these children.

6. **Drill**—But real instruction, such as vocation, or even the so-called academic work, must be cast into standard routine, and call into play drill and specific application. Maximum reliance must here be placed on the laws of learning and on the psychological laws of association. The socialized recitation, the project and the problem method, student government, and other of the modern educational practices will, in the case of these children, prove quite inapplicable. Drill to the point of automatization will be found the most reliable of methods. These children will never rebel against the fact that “to divide one fraction by another, you turn the second fraction upside down.” The great difficulty will be to train them to remember to treat the second fraction in this manner. Only after much repetition and drill will they acquire the habit. But the problem of when to divide one fraction by another, that problem which is not so susceptible to solution by mere drill, will tax the teacher of the sub-typical. Only within a limited sphere will she succeed in giving her pupils the prepared responses for this question.

7. **Concrete instances; specific applications**—The writer of this volume had occasion recently to give the intelligence test to a child who proved to belong to the class under discussion in this chapter. In reply to the question, “What ought you to do before beginning some-

thing very important?" this child stated, "If you are going to write a letter, you should first think what you want to say." The mental process observable in this reply is indeed interesting. The subject struggled with a generalization, himself converted the problem into a concrete instance, and as such solved it. Referring back, for a moment, to our suggestion of a preceding section that this class of children should be provided with large numbers of behavior patterns, it must be obvious that this child might acquire a habit of preparing to write a letter, but make little of the generalized counsel to exercise caution and make investigation prior to entering on an important engagement.

If one sought to establish a single outstanding characteristic of the sub-typical in contrast with the higher intelligence groups, that contrast would doubtless be found in the inability of these children to deal with abstractions, to make and to comprehend generalizations. The child who gives the type of answer noted in the preceding paragraph unfailingly gives examples when asked to define abstract words in the test, such as pity, revenge, charity, envy, justice. The test records found in psychological laboratories such as the one at Stanford University doubtless hold mines of information regarding qualitative differences, if one were to study the different ways of scoring plus on some of the questions.

The educational implications of these facts are of the highest importance. They argue the futility of presenting to these children general principles, theories, philosophies. They argue the need of presenting to them, instead, limitless numbers of specific instances. The person of high intelligence soon becomes bored with exam-

ples of the operation of any general law or principle. He feels amply capable of making his own applications. The person of low intelligence will, on the other hand, get verbal, not real, images from such words as "democracy" and "citizenship." *He must proceed toward maximum development by the process of amassing concrete instances.*

The same point may be made again by pointing out the need for specific application. The sub-typical child will not be taught shopping and budgeting by means of the general principles of arithmetic; he must actually apply these principles to specific acts. He will not make application of the principles of grammar; he must be drilled in correct usage. He will not apply the principles of rhetoric as worked out in standard forms such as narration and description; he must be taught letter-writing. It is only with the needs of these children in mind that one can understand the otherwise incomprehensible titles of an ever-increasing number of high-school texts on "business English" and "shop mathematics."

It would be amusing, if it were not so tragic, to see how, by failing to understand that their ideas are applicable always to certain mental types, never to all, numberless fads follow one another in the field of education. Formal grammar, to take one instance, has almost been eliminated from the schools in certain sections of the United States—wrongly so from the point of view of the super-typical, rightly so from the point of view of the sub-typical. These latter seem, as a matter of fact, to be having things all their own way. They are dragging the entire school system down to "minimum essentials." From the point of view of group instruction there is no

such single process and there never will be any such single process as "education." Until we discover, and apply our discovery, that different mental groups require different types of education, we shall be developing all of our children on that level which is adjusted to the dullest of them.

IV. Corollaries

It may not be amiss, if only for the sake of formal completeness, to make a brief statement of some of the implications inherent in the theory of this chapter.

Selected teachers—If educational differentiation is a substantial fact, then teacher-training institutions will hardly be able to continue to prepare teachers for a unitary type of education. If, in reality, there is no such simple and single concept possible as "education," when we speak in terms of group education in public schools, then there is no possibility of a simple and single course of teacher-preparation. Until such time as American teacher-training institutions, particularly those engaged in preparing the elementary school staffs, find themselves on a really professional basis, it will be necessary to train teachers for one of the several differentiated schools. Schools for sub-typical children will require teachers especially trained in the psychology of these children, in a sociological point of view regarding them and their future as independent members of our society, in a curriculum theory adapted to their capacities, and, finally, in the methodology of instruction especially adapted to their type. Only the inexperienced will inquire whether it will be possible to secure candidates for this preparation. Students of the subject have met many teachers,

former opponents of segregated instruction, who, after observation, have become "converted" and now take keen interest in seeing the new work develop.

Differentiated text-books—If there is any merit in the contentions of this chapter, then we are on the eve of a complete reconstruction of all of the text-books, certainly those in the elementary school field. When one discovers the difference in reading ability, meaning thereby ability to get ideas from print, the difference in the character of the appealing ideals, the contrast between general statements and specific instances, the difference between the explanation of a formula or law and the need for drilling in the application of this same law or formula, one envisages a complete reconstruction of the texts in arithmetic, language, and history; a totally new era in readers, geographies, and material that trains for citizenship.

Different equipment—The principles that imply difference in teacher-training and text-books imply as well difference in equipment. Children who have the ability to master abstractions and to make their own applications do not require, for example, the completely furnished apartments that we find in so many schools. They can be taught the principles of "artistic arrangement of colors and furnishings" without the use of a room arranged to "resemble a library and living-room." The teachers of these children acquired their knowledge and skills in art schools without the use of this equipment, and super-typical children can do equally well without it. Funds available for their equipment might better be spent on books, music, and other means suitable for their development. The sub-typical, on the other

hand, evidently need equipment that will emphasize specific application and drill in simple processes, as witness, for example, the equipment for manicuring provided in the Opportunity School at Pasadena.

Experimentation essential—Finally, the point may again be made that we are dealing in this volume with general principles, basic theory, to serve as a point of departure. Detailed procedure will be developed only after years of experimentation in many schools, and will doubtless differ as between localities, schools, and teachers. We are at the commencement, not the culmination, of educational differentiation.

V. Summary

In the effort to make specific application to the education of the sub-typical of the general principle of differentiation established in preceding chapters, we have found:

(1) That the use of mental age as a criterion for differentiation as well as for classification is unwarranted.

(2) That these children are actually capable of less quantity, and that quantitative as opposed to qualitative differentiation plays a greater rôle in the education of sub- than of super-typical children.

(3) That life should be simplified for these children by means of supplying them to the greatest possible extent with prepared habitual responses—behavior patterns.

(4) That preparation for vocation should be the basic objective in the education of these children.

(5) That the other objectives can be attained only

at lower levels than is the case with typical and super-typical children.

(6) That method as well as content will have to be differentiated by the employment of drill, the development of great numbers of concrete instances, and the continuous specific application of general principles.

(7) It will not be possible to put these principles into practice without the employment of specially trained teachers, specially devised books, and specially prepared equipment.

(8) Finalities in the field of procedure must await careful experimentation, for which these tentative principles should serve as a point of departure.

Bibliography

Note. The education of the dull normal, as distinguished from the mentally defective, is almost entirely new in American educational discussion. The following references, therefore, with the exceptions marked,* deal of necessity with defective rather than with sub-typical children.

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PART III

**THE EDUCATION OF TEMPERAMENT-
ALLY EXCEPTIONAL CHILDREN**

CHAPTER VIII

THE PROBLEM OF TRUANCY AND INCORRIGIBILITY

I. The Causes of Non-attendance

What are the causes which operate to bring about the conditions of non-attendance wherein the discrepancy between the population census and school attendance in twenty States is shown to be as large as one fifth, and in one State to reach the amazing figure of two fifths? ¹ Why are these children of school age not found in school? Many explanations have been offered, but almost no scientific study has so far been made. The discrepancy between child population and school attendance may perhaps be attributed to four principal causes, namely: (1) lax administration of the law; (2) the indifference or poverty of the parents; (3) employment furnished by those who are interested in exploiting child labor; (4) that deliberate and unnecessary evasion for which the child alone is responsible, and which is ordinarily referred to as truancy.

The measure of efficiency of the compulsory education enforcing agency in any community is very simple. The smaller the discrepancy between the census and school attendance—in other words, the smaller the percentage of the unaccounted-for group—the more efficient the administering agency. We have not yet worked out norms

¹ See *U. S. Bureau of Education Bulletin*, 1920, No. 11.

for judging the efficiency of attendance departments. We do not yet know what the percentage of the unaccounted-for group ought to be. In practice, it would seem, it ranges from less than five per cent in Massachusetts to more than twenty-four per cent in Louisiana.²

In accounting for children shown by the continuous census to be subject to the school law, we find (1) a group that are attending public school; (2) a group that are attending private school; (3) a group that are debarred from attending either public or private school by reason of physical or mental incapacity, and (4) a group who appear to be evading the law.

In dealing with the unaccounted-for or evading group, children may be divided roughly into three classes. We find, first, the group whose evasion is deliberately fostered by adults, whether they be parents or employers or other adults bent on inducing antisocial acts. In such cases it is the business of the enforcing agency to invoke the operation of the legal machinery provided by law for the enforcement of school attendance, whether such machinery be juvenile or other courts, or whether the official charged with the prosecution be the district attorney or the probation officer. In dealing with this group it is the fundamental duty of the school to invoke the aid of the courts and of the law-enforcing authorities to compel adults to refrain from keeping children out of school.

A second section of this law-evading group will be found to be kept out of school by the operation of sheer poverty—lack of clothing, lack of food, inability of parents because of negligence or stupidity, or employment

² See a note in *School and Society*, Vol. XIV, p. 428, which summarizes an official statement based on the federal census of 1920.

of the mother during the day. Such children must be rescued from these conditions, whatever they be, and must have their education safeguarded. In dealing with this group, the law-enforcing agencies ordinarily coöperate with the social relief agencies of the community. Aid may be provided; the children may be recovered from the care of incompetent parents; every case should be followed until the child is returned to school.

The third group, finally, consists of the truants. The causes of truancy and the characteristics of the truant are, scientifically speaking, little known. While we have a comparatively extensive literature on the subject of non-attendance,³ we have almost no reliable scientific information. Many reasons for truancy have been hazarded, but a perusal of the literature will indicate that in this field we are just emerging from the status of sentimentalizing and of the general assumption that all children would be good if they were made happy.

Some interesting information may be gained from the study of one hundred truants recently carried on in Philadelphia, and reported in a bulletin of the Bureau of Education.⁴ This study would seem to indicate: first, that truancy, in cities at any rate, is almost exclusively a boy problem; that it may begin as early as age eight; that it becomes prominent at age ten; that from this point it advances steadily to age twelve, and is likely to be most acute between ages twelve and fourteen. More than one half of the children reported in this study were truant between these ages. These figures are interest-

³ See bibliography in the *Fifteenth Year-Book of the National Society for the Study of Education*, Part II.

U. S. Bureau of Education Bulletin, 1915, No. 29, James S. Hiatt, "The Truant Problem and the Parental School."

ingly confirmed in a study made by Dr. J. Harold Williams of twenty-one boys, whose primary offense was chronic truancy, committed to the Whittier State School in California.⁵ In this group two boys began their truant habits as early as age nine, eleven boys—more than half—became offenders between the ages of twelve and fourteen; and the median age, thirteen, corresponds with the age of the largest number of truants found in the study reported above.

Information regarding grade location was gathered in the Philadelphia study. The group was decidedly a retarded one, and the greater the over-age, the more troublesome the person. Fifty-one per cent of this group of children were more than three years behind the grade normal for their age, and twenty-one per cent were retarded five years or more; only six per cent were at grade. It would seem that this showing can have only one possible significance; namely, that low intelligence is a most important factor in inducing truancy, for it is now almost universally conceded that the most fundamental cause of retardation, particularly aggravated retardation, is low intelligence. We shall return to a fuller consideration of this subject. First we must note some of the other characteristics of this class of children, and the current educational procedure in dealing with them in American schools.

II. Incurables and Truants in American City Schools

The opinion was hazarded in the preceding section that truancy is largely a boy problem; that it may begin as

⁵ "The Intelligence of the Delinquent Boy," *Journal of Delinquency*, Monograph No. 1, by J. Harold Williams.

early as age eight, becomes prominent at age ten, advances steadily to age twelve, and is likely to be most

TABLE IV

THE CITIES WHICH MAKE SPECIAL PROVISION FOR THE EDUCATION OF INCORRIGIBLES, THE GENERAL ENROLMENT, AND THE NUMBER OF CHILDREN UNDER SPECIAL CARE

City	<i>School Enrolment</i>	<i>Boys</i>	<i>Incor- rigibles per 100,000</i>	<i>Girls</i>	<i>Incor- rigibles per 100,000</i>
Akron	33,678	25	74		
Albany	13,638	70	513		
Atlanta	32,682	30	92		
*Baltimore	106,036				
Boston	141,138	45	32		
Buffalo	96,228	56	58		
Chicago	341,008	1200	352		
Cincinnati	66,557	20	30		
Cleveland	147,115	200	136		
*Columbus	36,931				
Dayton	25,423	21	83		
Detroit	143,677	303	211		
Grand Rapids..	21,980	80	364	30	136
Indianapolis ...	43,479	50	115		
Kansas City, Mo.	61,722	50	81	75	171
Los Angeles ...	160,228	736	459		
Louisville	32,599	20	61		
New Haven ...	32,097	31	96		
Newark	97,771	108	110		
*New York	1,033,528				
Paterson	26,703	30	112		
Philadelphia ...	319,263	710	222	36	12
Providence	40,042	199	497		
Richmond	31,520	30	95	5	16
Rochester.....	52,464	18	34		
*San Francisco..	50,371				
Seattle	60,223	122	202	52	86
Spokane	25,710	25	97		
St. Louis	108,226	250	231	50	46
Washington ...	65,298	180	276	20	31

* Enrolment details not available.

active between twelve and fourteen. We may now note the findings of our own study in these respects.

Of the sixty-eight cities studied, thirty report special educational provision for truants and incorrigibles. In view of the fact that less than half of the most populous cities make such provision, it is not likely that an important proportion of the smaller ones do so. With the exception of some few of these smaller cities, and a few instances where county provision is made, we probably have before us a statement of conditions as they actually exist in the American public schools.

In the table below, the cities are noted alphabetically for purposes of ready reference to the status of any particular city. For purposes of comparison in terms of population, the reader may turn to Tables I, II, and III in Chapter II. The school enrolment is given in order to ascertain whether any percentage of incorrigibility and truancy exists which may be said to be typical. The reader will note, too, that the sex is indicated in order to ascertain whether a difference exists from this point of view. (See Table IV on page 171.)

Conclusions from the statistical statement—It would seem clear from this table (1) that the country as a whole makes inadequate provision for these children, (2) that boys apparently present far the greater problem, (3) that it is not possible to make any deduction whatever regarding the frequency of occurrence of truancy and incorrigibility, and (4) that the problem of the incorrigible and truant girl, whatever may be its extent, is neglected in most American school systems.

Day or residence school?—When a child, by virtue of incorrigibility or truancy, becomes a problem so unmanageable as to require special attention beyond that within the powers and facilities of principal and teacher in the

school to which he belongs, shall the central organization provide special day centers and classes, or shall the children be gathered for supervision and reëducation into residence schools for full custodial care? As a matter of practice, the answers differ as noted below. Some cities provide day schools, some provide day disciplinary classes in various parts of the city, some provide full-time residence schools, and, finally, some cities combine two or more of these methods:

TABLE V

RESIDENCE SCHOOLS, DAY SCHOOLS, AND DISCIPLINARY CLASSES IN AMERICAN CITY SCHOOLS

<i>Cities which provide Residence or parental schools</i>	<i>Cities which have central day schools</i>	<i>Cities which have scattered disciplinary classes</i>
Atlanta Baltimore *Chicago *Cincinnati Detroit Kansas City Newark *New York Seattle Spokane *St. Louis	Albany Cleveland *Columbus Dayton Grand Rapids Indianapolis New Haven Paterson *Philadelphia Providence Richmond San Francisco	Akron Boston Buffalo Los Angeles Louisville Rochester Washington

* Day disciplinary classes are also in use.

In terms of practice, judging by the data, the answer to the question raised in the preceding paragraph is not clear. There are eleven residential schools,⁶ twelve central day schools, and seven cities in which scattered disciplinary classes are in use. One would like to know whether residence schools are non-existent in some of

⁶ And in several other cities residence facilities not controlled by the board of education are available.

these cities by virtue of lack of funds or because of basic theory regarding the education of incorrigibles and truants. It may perhaps be assumed that in most of the cities which employ the system of scattered classes the central day school would be considered preferable, although even to that there would be some dissent. But quite clearly, as ascertained by a canvass in connection with this questionnaire, not all the cities which employ the day-school system would prefer the boarding-school. Many object to it in theory and insist that the child should maintain his home relations.

Briefly put, the argument for each side would run somewhat as follows: Those favoring the residence school have in mind the desirability of eliminating the unsuitable home from the environment of the child; they wish to rehabilitate him by the elimination of bad habits hitherto established, and the substitution of better ones, and for this purpose desire a period of uninterrupted supervision.

Against the residence school, on the other hand, it is stated that where the home is an improper place for the rearing of the child, there is presented an institution case, to be met by some custodial agency of the State or county, a case which does not properly belong to the city schools. Where, on the other hand, the home is reasonably suitable, then its coöperation should be enlisted, and it works harm to the child to sever his relations with the home. As will be shown later, we do not yet have reliable information regarding the causes and can, therefore, not lay down principles for remedial procedure in the education of these children. The question of the best type of school provision, whether full time, residence

or day school, must, therefore, await solution of these more basic problems.

III. Characteristics of Truancy and Incurrigibility:

A. Age and Sex

Of the twenty-six cities in Table IV for which figures are available, all have special facilities for boys but only seven make provision for incurrigible and truant girls. In no case do we find provision for girls, where it is lacking for boys. Obviously, so far at least as concerns the schools, we are here concerned with a problem which affects mainly boys, although the problem of the girls is not handled as far as it does exist. The reason for this will in part be found, as indicated in the paragraphs that follow, in the fact that girls become troublesome at a somewhat later age than boys, and one which is quite close to the end of the usual compulsory school period.

Earliest and latest age—To the question, "Between what ages do you find truancy and incurrigibility?" twenty-four replies were received for boys and fourteen for girls from those presumably having experience. As will be noted from the table which follows, the variation is so large as to be of little practical value, except perhaps to show the earliest and latest ages at which incurrigibility and truancy may occur.⁷ (See Table VI on page 176.)

It is obvious that a number of factors enter to make this statement unreliable. At one end there may be involved the fact that certain cities are not prepared to

⁷ The writer is aware that these data are not as reliable as would be the actual records from the various institutions. The effort in this somewhat extensive study has been to formulate hypotheses rather than laws, and to lay the basis for detailed and more minute studies.

deal with children below a certain age, or do not believe it policy to take jurisdiction over them out of the hands of the principal, or to remove the children from their own neighborhood. At the other extreme we face the end of the period of compulsory education which removes the child from the jurisdiction of the city school authorities.

TABLE VI
AGE RANGE FOR INCORRIGIBILITY AND TRUANCY AS ESTIMATED BY
EXPERIENCED JUDGES

<i>Earliest age</i>				<i>Latest age</i>			
<i>Number of judges making this statement</i>	<i>Boys</i>	<i>Judges</i>	<i>Girls</i>	<i>Judges</i>	<i>Boys</i>	<i>Judges</i>	<i>Girls</i>
2	7	2	8	3	14	2	14
6	8	3	10	8	15	2	15
2	9	1	11	10	16	6	16
7	10	5	12	2	18	2	17
3	11	2	13			2	18
4	12	1	14				
24		14		23		14	

At any rate we may note these tendencies which in effect confirm the conclusions arrived at in the preliminary statement in this chapter. Girls probably become unmanageable somewhat later than boys. Boys may become incorrigible as early as age seven. For the mass the troublesome boy probably shows up by age ten, and the girl of the same type by age twelve. On account of the operation of the compulsory education law and the shading of the most difficult cases of incorrigibility into the type of delinquency that the police and courts deal with, it is difficult to set a "latest" age.

Most frequent age—What is the most critical or difficult age? In view of the apparent tendency referred to in the preliminary statement of this chapter to indicate age thirteen as the most likely and therefore the most critical age for boys, these same judges were asked to answer the question: "Can you make any statement as to which is the most frequent age?" The request was, of course, frankly for an opinion from those having experience, and the answer will rather foreshadow probable findings than make a statement with statistical accuracy. The question was answered by twenty judges for boys and by nine for girls. In the following table correction has been made so that where a particular judge gave an age range instead of a specific age, the central point is used.

TABLE VII
MOST FREQUENT AGE OF INCORRIGIBILITY AND TRUANCY

<i>Judges</i>	<i>Boys</i>	<i>Judges</i>	<i>Girls</i>
1	10	2	12
2	12	1	13
2	12.5	3	14
9	13	2	14.5
1	13.5	1	15
3	14		
2	15		
20		9	

Nearly half of the judges name thirteen as the critical age for boys, and, if we add those only one half year on either side of this age, the range from 12.5 to 13.5, we have the opinion of twelve of the twenty judges, a most interesting confirmation of the conclusion already arrived at, and reasonable ground for predicting that an exact study of the actual records will most likely produce the

same results. For girls, the point of danger comes somewhat later, evidently between the ages 13.5 and 14.5.

Incorrigibility and adolescence—It is apparent that incorrigibility is more closely related to adolescence than to some of the more sentimental causes that have been suggested. Particularly in the case of the girls is this of interest, when we note that although girls ordinarily become adolescent about a year earlier than boys, their point of danger chronologically appears to be one year later than for boys. When these facts are considered in connection with the low intelligence of this group to be brought out in a later section in this chapter, the danger-point in the social development of the girl becomes apparent.

IV. Characteristics of Truancy and Incorrigibility: B. The Rôle of Intelligence ⁸

We noted in considering the findings of a detailed study of one hundred truants made in the city of Philadelphia, and another in Whittier, California, that low intelligence seemed to be an important cause of this type of school delinquency. If this conclusion should prove well grounded, it would seem inescapable that the first and most important step to be taken in the study of truancy is the giving of psychological tests to all truants. In cases where feeble-mindedness or dullness far below average is found, no further cause need be sought, the child being evidently out of place in the school as ordinarily

⁸ The reader who is not already informed regarding modern intelligence measurement should, in preparation for this section, see Chapter III.

organized, and incapable of adjusting himself to the ordinary school situation.

Contrasting views—Two students have recently come to diametrically opposed conclusions on this subject, and it may be of interest to restate their views briefly. Dr. Doll states his findings and opinions tersely in the form of four propositions:⁹ (1) A heavy portion of juvenile delinquency is directly or indirectly traceable to truancy. (2) This truancy is caused in very large measure by failure of the public school to adapt itself to the individual differences and consequent special needs of children. (3) This condition could be overcome in large measure by a scientific classification of children according to individual differences in mental type. (4) This scientific classification must be supplemented by differentiated courses of study, and adapted to the needs of special levels and special types.

If these contentions are true, then we have, in the several preceding chapters, already dealt with this problem in detail. But one does not find absolute unanimity of opinion. In a recent study covering a large number of subjects and a rather extensive territory,¹⁰ the writer states it as one of his conclusions that "environmental influences more often caused a child to stop attending school than did lack of ability to do the work. It has been suggested," he says, "by some who give large stress to the factor of heredity that the environmental factors

⁹ E. A. Doll, "Mental Types, Truancy and Delinquency," *School and Society*, Vol. 14, p. 482.

¹⁰ "The Relationship between Persistence in School and Home Conditions," C. E. Holley, *Fifteenth Year-Book of the National Society for the Study of Education*, p. 98.

measured here are merely an objective expression—a resultant—of the heredity of these homes.” However, he does not believe that his facts lead to any such conclusion.

Other evidence—Such an inference would, nevertheless, seem to be in line with the Philadelphia and Whittier studies referred to above, and is even more interestingly confirmed in the report of another study conducted in New York City, and including one hundred and fifty cases.¹¹ In this instance an intelligence test was given to every child, and it was found that forty-three per cent were “actually feeble-minded” and eight per cent were border-line cases, indicating that a total of approximately one half of all the truants studied were below average intelligence.

In Dr. Williams’ study of twenty-one truants referred to above, ten cases were found to belong to feeble-minded and border-line status and to be defined as below normal. In view of the scant data in these studies, no conclusions can yet be drawn; yet it is an interesting coincidence that the proportion of one half is maintained in both. Dr. Williams found a single child of better than average intelligence. The median intelligence of his group of truants was I. Q. 84. It is unfortunate that the New York study does not indicate the intelligence status of the forty-nine per cent found to be of an intelligence above border-line.

It would be interesting to know the frequency of truancy among children of better than average intelligence. One feels inclined to believe that the percentage would be almost insignificant. After all, truancy

¹¹ *Truancy*, by Elizabeth A. Irwin.

is a rather vague, undirected, and unplanned sort of thing. The superior child who became dissatisfied with school would be likely to engage in some occupation, or enter some school that pleased him more.

It would seem hard to doubt the probability that poor intelligence is a major cause of truancy, very likely accounting for fifty per cent of the occurrences. Experienced supervisors of these children continually make the assertion that low intelligence is a major factor. One state supervisor of a school for delinquent girls expresses the opinion that "feeble-mindedness is responsible for from one-third to one-half of all cases of delinquency," and the supervisor of a city truant school for boys reports on the basis of Binet tests that nine per cent of his charges are imbeciles, and forty-six per cent morons.

In reporting "an investigation of children under Council Supervision" conducted by the Society for Experimental Pedagogy in Denmark,¹² Professor Tybjerg gives the following facts regarding these children, who "are criminally or morally corrupt." As regards the seven hundred children studied, "it was found that the critical age . . . is thirteen to fourteen years for boys and fifteen to seventeen for girls." More than fifty per cent of the group received the lowest intelligence rating, "poor," and less than two per cent received the best rating, "excellent."

While truancy is not synonymous with "criminal or morally corrupt," and while the intelligence status of the group is not indicated in quantitative terms, the evidence is, nevertheless, significant in view of its confirmation of the critical age and the probable intelligence,

¹² *Journal of Educational Research*, Vol. IV, p. 307.

as indicated in the three foregoing studies already referred to.

Intelligence status of children in city disciplinary schools—Our preliminary study has led us to suspect that low intelligence is probably the greatest single factor causing truancy and incorrigibility—a fact which, if true, should completely revolutionize our educational procedure in this field. What are the facts disclosed? The first and most important question to be determined is how extensively the practice of giving intelligence tests to incorrigibles and truants is in use. Of the thirty cities under consideration, three made no reply, twenty-two stated or intimated that intelligence testing is regularly in use, and five replied that they do not employ the test, these being Boston, Dayton, Indianapolis, Paterson, and Philadelphia. It is not impossible that in the other cities the use of the test is occasional rather than a regular part of the routine. How important and essential the use of the tests is in the care of these children will be evident from what follows.

As it was not practical, for purposes of this extended study, to secure data regarding intelligence from the cities studied, the question was asked of those in a position to have a reasonable opinion: "What are the findings as to the relation between incorrigibility, truancy, and intelligence?" Twenty-two replies were received to this question, and of these, sixteen were definite to the effect that these classes were of low intelligence, four seemed to feel that they were of average intelligence, and two were very vague indeed.

It will be of interest to repeat and in part classify the replies. Of the sixteen who believe that there is a definite

relation to intelligence, two answer somewhat inscrutably, and, it is true, with some chance that they are being misinterpreted here, "direct proportion" and "inverse ratio." Of those making clear but somewhat general statements, we learn that these children are "always retarded, not always feeble-minded"; that "possibly ninety per cent are below grade for age"; that a "very large percentage are of low mentality"; that they are "on the whole, dull normal"; that there is a "high correlation with low normal and dull"; that they are of "lower average intelligence"; that a "large majority are inferior normal or retarded—possibly ten per cent feeble-minded"; that there is "a close correlation—almost always sub-normal"; and, finally, that "an incorrigible child is a deficient child."

The remaining replies which indicate low intelligence are more exact. The reader's attention is particularly called to the fact that with more exact statement and specific reference to I. Q. we immediately find a definitely large amount of low intelligence. In none of the four instances to be noted later where the opinion was expressed that there is no relation between intelligence and incorrigibility, are figures cited. To proceed: One of the remaining replies is that these children have an intelligence between I. Q. 70 and 85, and another that the intelligence of the majority is between I.Q. 70 and 85, "practically all backward." One of the replies is to the effect that "seventy-five per cent of the children are below normal"; another that "fifty per cent are subnormal," and the last one to be quoted states that sixty-six per cent of the boys and fifty per cent of the girls are below I.Q. 80.

The four replies that go counter to these opinions are that "the incorrigibles and truants have an average degree of intelligence," that they are "apparently not defective, mostly normal," that there is not a "very close correlation," and, somewhat inconsistently one feels, that there is "no observable relation here, since some who rated as 'genius' are incorrigibles; on the whole the median intelligence is lower."

Two of the replies are interestingly vague. The person in charge of the education of these children in one American city hasn't "followed this up close enough to answer," and the other does answer to the effect that "tests often help us but chief cause of truancy is marital infelicity on the part of parents and commonplace homes."

Although no other questions were asked regarding intelligence than the one quoted, and the question whether tests were in use, the principal of one of the schools sent on a list of fifty-five boys and their intelligence ratings, representing all of the children that were in the school for the academic year 1920-21. In view of the fact that there was no intention to use actual figures in this study, and that the forwarding of these figures was absolutely accidental, representing the only case in which actual figures indicating intelligence status of a group was forwarded, the reader may be willing to look at this list as a case of "random sampling." Certainly it is not a case of selecting data deliberately to prove a thesis. These figures came to the writer without solicitation, and they are the only set of figures that did come.

The Table below sets forth all the intelligence quotients of the fifty-five boys who constituted the entire group in

an American city disciplinary school during one academic year:¹³

TABLE VIII

INTELLIGENCE STATUS OF ALL BOYS UNDER INSTRUCTION IN A CITY
DISCIPLINARY SCHOOL DURING ONE ACADEMIC YEAR

<i>Case No.</i>	<i>I. Q.</i>	<i>Case No.</i>	<i>I. Q.</i>	<i>Case No.</i>	<i>I. Q.</i>
1	57	22	73	43	86
2	59	22-25	74	44	88
3	63	26-27	75	45	89
4	65	28-29	76	46	90
5	66	30-31	77	47	91
6-7	67	32-34	78	48	94
8	68	35	79	49	97
9-10	69	36-37	80	50	102
11-15	70	38-39	81	51	104
16-19	71	40-41	82	52-54	105
20-21	72	42	84	55	113

The reader will observe from the foregoing table that the median intelligence for this group of incorrigibles and truants is 76, very nearly feeble-minded, as against 100 for the population at large; that thirty-five of the children, or more than half of the group, are classifiable as feeble-minded or border-line cases; that forty-five of these children, or more than eighty per cent, are possessed of less than average intelligence, which begins with I.Q. 90, and that only ten children, or less than twenty per cent of the total, are possessed of average or better intelligence, as against eighty per cent in the population at large.

We find in this group just one child, less than .02 per cent, of a degree of intelligence better than average, as against twenty per cent in the population at large. Following Terman's nomenclature and classification, this

¹³ The data referred to was forwarded by Mr. V. M. Henderson, principal of Boys' Special School, Cincinnati.

group contains more than twenty-five times as much "definite feeble-mindedness," less than one third as many children classifiable as of "normal or average intelligence," and less than one fortieth of those degrees of intelligence rated as better than average, as compared with the child population at large.¹⁴ The educational implications would seem to be obvious. This group does not need any of the treatment that has been advocated in the literature, nor is the school to blame for their delinquency. *They require the special treatment, preferably institutional, that is scientifically indicated for feeble-mindedness.*

Parental and disciplinary schools punish children for dullness—It would seem sufficiently clear from the foregoing that very low intelligence is a major cause of incorrigibility, and that this problem will not be handled in a scientific manner until such time as every department and special school charged with the education of these children makes an intelligence diagnosis of every child, undertakes to place every definite institution case in a place for the feeble-minded, locates every dull but non-institution case in the special class or school for the dull, not the incorrigible, and then proceeds to study the educational problem involved in the fact of incorrigibility and truancy on the part of children of normal mentality.

For the present, the cities are almost in as bad a case as the penal institutions. They undertake to punish dullness, for every special school, to some of which commitment by judicial procedure is necessary, is to-day a semi-penal institution. Yet some of the largest cities in the country do not yet test these children for intelli-

¹⁴See L. M. Terman, *The Measurement of Intelligence*, Houghton Mifflin, 1916, Chap. V.

gence; some of those most liberal in the support of public education have in charge of this work persons who haven't "followed this up close," or do not observe "a very close correlation." The reply from a single city, Richmond, Virginia, was in clear terms to the effect that subnormal children were placed in special classes for these children, and not in the disciplinary classes, although it must undoubtedly be true that other cities follow this procedure more or less systematically.

Under these circumstances, indicating the presence of non-homogeneous groups in the special schools and classes for incorrigibles and truants, one cannot expect to find well-thought-out educational procedure specifically adapted to the particular needs of the children in question. Specially selected teachers; investigation of home conditions; a hot lunch in the day schools to keep the children out of mischief and under control; attention to nutrition and correction of physical defects; special systems of discipline involving merit points; and one whereby children "work their way out by gaining credits;" lessened curriculum demands, featuring handwork—this sums up the available information regarding procedure. One suspects that in the large majority of cases these children do not "work their way out" until the end of the compulsory education period is reached. The problem for the immediate future in the case of the special study and education of the children under consideration seems clear.

V. Incorrigibles and Truants of Normal Mentality

When we face the problem of the cause and eradication or special educational treatment of truancy and incorrigibility of that half of the total group who are pos-

sessed of average or better than average intelligence, we find ourselves quite definitely in a field of conjecture. Two things need to be done: we should first make an effort to list as many as possible of the causes of truancy, and, the list made, we should endeavor, on the basis of further investigation, to rank these causes in the order of frequency—the sequence of their occurrence. With a list of this type added to our knowledge regarding the intelligence status of half of this group, the preliminary examination of any case of truancy or incorrigibility would consist, first, of a mental examination and in the case of children of normal intelligence, an attempt to locate the cause either among those listed as most frequently found, or on some new ground.

The cause found, what shall be the educational procedure? If, as seems probable, no single cause other than intelligence will account for any large group, the reasons for truancy and incorrigibility being rather numerous and unrelated, it would seem that there can be no single standard procedure. The normal fifty per cent of any group of truants and incorrigibles would in all likelihood not be sufficiently homogeneous from any point of view to warrant similarity of procedure and, therefore, segregation in any particular school.

In brief, it would seem that fifty per cent of the present pupil groups in the American disciplinary schools belong in special institutions suited to their type of intelligence, and the other fifty per cent present so little homogeneity as to make it inadvisable to gather them in any single type of school. It seems, therefore, questionable whether the American disciplinary school as such, of either the day or the boarding type, has a real educational function.

Though no statement can be made with any finality, an attempt may be made at listing some of the probable causes of truancy and incorrigibility. We shall hazard five main causes: namely, (1) nomadism, (2) harmful home conditions, (3) educational maladjustment, (4) failure to control bad habits at their incipency, (5) the restlessness of adolescence.

Nomadism, a tendency which, in small degree, most of us may discover in our own make-up, hardly needs elaboration here. Efforts to establish counter-attractions for the child, to build up loyalty to, and interest in, the school, are very essential. Harmful home conditions may comprise such elements as poverty, degeneracy, broken or unhappy homes, lax discipline, failure on the part of parents to understand the temperament of the child, too great severity in discipline.

School maladjustment may mean the undifferentiated education which makes for retardation, hence dissatisfaction with the result of one's efforts, classification with children younger and smaller than oneself, lack of sympathy and understanding on the part of the teacher. Early habit plays a large part in the development of truancy and incorrigibility. Lax discipline, failure to discover tendencies, and other factors which make continuance pleasurable are harmful beginnings for which the child must suffer the consequences later on. Adolescence, finally, as has already been shown, is a period during which all factors making for truancy and incorrigibility are most active. A sympathetic comprehension of adolescent boys and girls remains one of the most important functions of the school.

VI. Summary

This chapter is a study of the present educational status, in city schools, of children who are incorrigible and who are habitual truants. Almost no direct scientific investigation is available concerning the causes of truancy and incorrigibility, and until these facts are known remedial procedure must remain vague and undirected. A preliminary discussion, in which a number of studies was referred to, led to the conclusion that we are dealing here with a problem that probably involves boys rather than girls; that it may present itself as early as age eight, but becomes acute after age twelve; and that low intelligence probably accounts for at least fifty per cent of the cases.

The present investigation, covering the sixty-eight American cities of one hundred thousand or more population, indicates that thirty of these cities make some provision for the special education of these children, eleven by means of full-time residence or "parental" schools, twelve by centrally located city day schools, and seven by so-called disciplinary classes located in various sections of the city. In view of the variation in practice, it is patent that there is no unanimity of agreement regarding the best type of school provision. In view of the lack of knowledge regarding the basic causes of the defect to be treated, and, therefore, regarding desirable remedial procedure, the best type of school provision cannot be decided on at this time.

Our study confirms interestingly the preliminary conclusion that so far as the school is concerned we are dealing here with a problem that concerns mainly boys,

that the troublesome period may be as early as age seven or eight, that it becomes prominent at age ten, that from this point it advances steadily to age twelve, and is likely to be most acute between the ages of twelve and fourteen.

Regarding girls, the evidence would seem to indicate that the earliest age is much nearer adolescence, i.e., age twelve, and that the point of greatest danger comes one year later than is the case with boys, i.e., between ages 13.5 and 14.5. It would seem clear that a definite relation will ultimately be found to exist between incorrigibility and adolescence. In the case of girls, the fact of the later recurrence of the most frequent age, taken in connection with the fact of their earlier maturation, would seem to indicate the particular character of the danger, especially when one bears in mind the low intelligence of the children under discussion. Evidently the nature of the offense, and the fact that the most troublesome age comes so near the end of the ordinary compulsory period, account for the fact that the incorrigibility of the girl is not regarded an important problem of the school.

This study also tends to confirm the conclusions reached in the preliminary discussion, that a main factor in the causation of incorrigibility is low intelligence. It seems safe to state that feeble-mindedness or very-low grade intelligence accounts for fifty per cent of all the cases. Children of good intelligence, and particularly children of better than average endowment, find more satisfying, more effective, and more remedial means of expressing their dissatisfaction with school than the vague, undirected behavior involved in truancy and incorrigibility.

The obvious conclusion to be arrived at, as the result of this and preceding studies, is that all schools and departments dealing with truancy and incorrigibility should be equipped with facilities for diagnosing intelligence status; that children found to be feeble-minded and incapable of ultimate self-maintenance in society should be placed in institutions; that children who are dull but not typical institution cases should be placed in schools and classes adapted to their degree of intelligence; that, so far as concerns real incorrigibility and truancy, i.e., offenses of this character on the part of children of average or better than average intelligence, a group that will represent numerically a comparatively small problem, special studies need to be made regarding causes and, in terms of the findings, special educational provisions should be made. The relation of incorrigibility and truancy to adolescence will be found to disclose important basic facts, and indicate similarly basic necessary adjustments.

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CHAPTER IX

THE EDUCATION OF SPEECH DEFECTIVES

I. Present Status of the Problem

A grave handicap—The reader may, by the process of introspection, visualize the attitude of the ordinary person toward the speech defective, particularly if the case is severe. But what are the feelings of the victim of this defect? "Having 'gone through the mill' myself," says one of these,¹ "I know the mental suffering, the frequently desperate moods to which those afflicted with an impediment of speech are subject, especially if they have already called in assistance at great sacrifice of time and money without obtaining any lasting relief. A person who, in moments of dread of speaking, has felt himself near a fainting fit, owing to the enormous nervous strain, alone can conceive how fettered speech affects the sufferer's mental and bodily well-being, quite apart from the hampering influences which he experiences in his professional work, or in his social relations."

"Of human afflictions," says another student,² "stuttering is one of the most elusive. Persons who are handicapped by it often find no one who can give intelligent advice or treatment. Many become victims of quacks. Moreover, if we look to various recognized authorities on

¹ Appelt. See bibliography at end of chapter.

² Anderson. See bibliography at end of chapter.

stuttering, we find great diversity in the theories which have been put forward. . . . There seems to have been no systematic survey made on the basis of experiments set up to put hypotheses to a test and then get evidence on a scientific basis." "Those suffering from this defect," says Dr. Martin,³ are probably the most neglected class of afflicted human beings in the world, having received, until lately, but little attention from either the pedagogic or medical profession."

Here we have the picture of a grave and hindering defect, to which we have so far paid comparatively little attention. To the suffering here described must be added the individual and social loss represented by the fact that otherwise competent persons are driven out of those professional and commercial pursuits which involve oral communication. Is this type of deficiency and handicap properly a problem for the public school? If the answer to this question should be in the affirmative, what are the suitable methods of organization and of remedial procedure? These are the questions to which we shall address ourselves in this chapter.

Causes not well established—"Modern medicine and psychology have put to their credit a notable achievement by the demonstration that defective speech is at bottom a mental rather than a physical disease, where a definite defect of the speech organs does not exist. Children suffering from such a speech defect as stuttering are highly strung or sensitively organized. They are emotional, temperamental, and easily influenced."⁴

"Modern medicine has put to its credit a notable

³ See bibliography at end of chapter.

⁴ J. McDonald, "Speech Improvement," *Proceedings, National Education Association*, 1916, p. 862.

achievement by its demonstration that defective speech is at bottom a pathological condition. . . . At the University clinic at Berlin it was definitely demonstrated by Professor Herman Gutzmann that defective-speech children are sick children. Lispers usually had some pathological condition of the peripheral end organs of speech. Stutterers usually had a central involvement which required extensive medical examination to diagnose and classify. A speech specialist of America bears out the pathological contention by citing that 97 per cent of 1,000 cases of stuttering that came under his observation had some pathological condition that required medical treatment; and in about 38 per cent of the cases, surgical treatment of some form or other had to be resorted to."⁵

And so the doctors differ, illustrating what to us is very important; namely, that we are pioneering in a new field. Some of the students of this subject take rather extreme positions. "It is my endeavor in this paper," says one of these,⁶ "to uphold the thesis that in stuttering the speech mechanism is not at fault; the trouble is the mind. It is the mind that is tied and not the tongue. The cure therefore must be worked out in the psychic realm and not in the physical."

"The latest authors on the subject," says Appelt, "have unanimously come to the conclusion that stammering is solely a psychic ailment, in the center of which stands 'dread of speaking.' This, as a momentum of inhibition, interferes with the automatic execution of that

⁵ J. S. Greene, "The Mission of the Speech Specialist," *Proceedings*, National Education Association, 1916, p. 864.

⁶ H. M. Creasy. See bibliography at end of chapter.

function. . . . The affliction is of a central or psychic nature, induced by a disturbance of the will, the cause of which, it must be acknowledged, has remained unexplained up to quite recent years."

Advocates of this position in its extreme applications discard the services not only of the physician but of the teacher as well. "Well known medical men," to refer to Appelt again, "who have made the deepest possible study of this subject, have been able to cure neither themselves nor others of this malady." The teachers fare no better, it seems. Regarding the work we are to describe in succeeding pages, carried on in various American cities, this student remarks that "intelligent investigators reject more and more conclusively all tiresome exercises which aim at a systematic training of the organs of speech, having at last begun to realize that the stammerer can speak, provided that no psychic influences interfere."

The pedagogues tend to agree with the idea that the causes are temperamental rather than pathological, and that, therefore, the treatment should consist of training, a method which belongs to the teacher, and not of surgery or medication, which belongs to another profession. "Experience has shown that in many cases a cure may be effected with comparative ease if the training is begun at an early stage. . . . It has been demonstrated that great improvement and even cure can be effected if only one-half hour of instruction is given per week."⁷ Stuttering, says Dr. Gesell,⁸ "is definitely curable, and

⁷ Mitchell, David, *Schools and Classes for Exceptional Children*, p. 41.

⁸ Gesell, Arnold, *Exceptional Children and Public School Policy*, p. 47.

responds to corrective training. Such training is largely a skilled and specialized phonic instruction which can be given in public school classes."

Remedial procedure not established—But there is in fact as little agreement regarding the type of treatment to be given in school as there is regarding the basic causes of speech defect. There is no standard, generally accepted procedure. "During the last school year [1915-16]," reports Dr. Walter B. Swift, "I travelled some two thousand miles and visited over twenty-five cities for the purpose of ascertaining what methods were used for the improvement of speech in the public schools. I found the methods as numerous as were the cities visited."⁹

We are dealing here with a grave hindrance frequently developed by the child during the pre-school period, already established as a handicap at the time he is brought to school; and the fact of the matter is that we have very little information on the subject, and, at present, very little interest in it. Modern school systems to-day subject children to physical examinations; advanced school systems subject them to mental examinations; but no school system makes a speech survey of the entering school children, a procedure which must ultimately be adopted if this problem is to be faced systematically and scientifically.

Not only do teachers and systems differ in the mode of attack; within the system and with the same teacher, the statement is sometimes made that uniform procedure is not possible. "The method used depends entirely upon the individual; the subject must be studied." Meanwhile we hear of correct breathing, relaxation, rhythm,

⁹ In *Proceedings*, National Education Association, 1916, p. 864.

articulation, pronunciation, tone production, the development of self-confidence, poise, and, finally conscious control of the speech organism which others use without knowledge of its operation.

One or two systematic statements regarding procedure, made by leaders of this work in the public schools, may be of interest to the reader. "In our treatment of stuttering and other fundamental speech disorders," says P. B. Camp, describing this work in one city school system,¹⁰ "we follow Dr. Blanton's outline. Attention is given first to reëducation. Exercises are given for correct breathing. If the diaphragm and other muscles concerned in breathing can be made to act correctly and easily until this action becomes habituated, a strong resistance to emotional disturbance is formed. A certain amount of drill in corrective phonetics is also given. Second, we try to find the emotional cause and, if possible, remove it; but if this cannot be done we attempt to change the individual's attitude towards it."

"For practical purposes," says Mrs. E. W. Scripture,¹¹ "we have divided the speech mechanism into its four constituents; breathing, phonation, articulation, and thinking, and provided exercises not only for each of these, but also for bringing about a proper coördination of the four."

Nomenclature and classification of defects not established—The character of the deviation from normal which constitutes deficiency that should be treated has not been standardized. Probably there are no universally agreed upon norms by which to determine correctness of

¹⁰ See bibliography at end of chapter.

¹¹ See bibliography at end of chapter.

speech. At the present, only severe cases of deviation are treated, and as to these, there is no established classification, hardly a uniformity of nomenclature. An attempt was made in this inquiry to gather the names of the various defects dealt with, and these will be listed here, although they are probably not exhaustive, and under various of the names and headings duplications are possible.

In a recent survey of speech defects undertaken in the Los Angeles schools,¹² the following nomenclature was employed:

1. Stammering—spasmodic action of the speech organs.
 1. Audible.
 3. Silent.
2. Stuttering—rapid repetition of the first sound in words; for example, t-t-t-to.
3. Cluttering—rapid, choppy, indistinct speech.
4. Lipping—substitution for sounds: s-z-sh-zh-ch-j.
5. Infantile speech—baby-talk.
6. Defects from malformations of the mouth.
 1. Jaw conditions (protrusions or recessions).
 2. Malocclusion of the teeth.
 3. Cleft palate.
 4. Harelip.
7. Foreign accent.
8. Voice defects: harsh, nasal, weak, monotonous, etc.

In a circular letter issued to the teachers of the Des Moines city schools, there are mentioned, in addition to the defects noted above, lalling or cognate or related defects (eight different types) and the condition known

¹² By Miss Alice C. Chapen.

as tongue-tied. Finally, the present writer's request for information elicited these additional types: aphonia, diphonia, hasty, harsh, slovenly speech, lack of resonance, nasality, monotony, substitution.

The most difficult of these defects, without question, is stammering, which Dr. Martin defines¹³ as "a halting, defective utterance . . . a momentary lack of control of the muscles of articulation in the effort to speak," a difficulty which sometimes becomes "an absolute halt, complete inability to produce voice." "Stuttering," to follow Dr. Martin further, "is one form of stammering, and consists of the unnecessary repetition of a letter or a word before passing to the next." Dr. Martin notes four other types of defect; i.e., lipping; lalling and cognate defects; defective phonation; foreign accent.

The interested reader will find in one of the University of Iowa Studies¹⁴ a rather extensive classification of defects and their presumed causes. We shall reproduce here only the defects, which are given in three main groups:

I. Defective control of breath.

1. Breathing on an inspiration instead of an expiration.
2. "Breathy" tones.
3. Spasmodic movements of diaphragm, glottis, and larynx.

II. Defective articulation.

1. Mispronunciation.
2. Echolalia.

¹³ See bibliography at end of chapter.

¹⁴ See bibliography at end of chapter.

3. Sluggishness.
4. Cluttering.
5. Stuttering and stammering.

III. Defective vocalization.

1. Complete absence of speech or absence of special tones.
2. Nasality.
3. Monotony.
4. Hoarseness; harshness.
5. Throatiness.

Incidence not well established—When we come to a consideration of the extent of the problem of speech deficiency, we seem again to be in possession of comparatively little information. Some information is, however, available from a number of surveys that have been made of school-children and others. Dr. Wallin made an extensive investigation ¹⁵ covering a school population of 89,057 between the ages of five and twenty-one. He found the percentage of speech defectives to be 2.8. He presents an interesting review of data from other studies from which we learn that a survey of speech defects among boys over thirteen years of age in Liverpool resulted in discovering 2.5 per cent, that 2.46 was the percentage found as the result of a survey much like his own covering school-children in Kansas City, Milwaukee, Louisville, Albany, and Cleveland. Studies in Denmark and New Orleans indicated the presence of 2.2 per cent of speech defectives.

¹⁵ See bibliography at end of chapter.

Dr. Wallin's analysis of types of defect is particularly instructive. His distribution is as follows:

Lisping	1.6
Stuttering	.7
Other defects	.4

In view of the absence of standardized classification, comparison in detail is somewhat difficult, but it may fortunately be made for the most difficult of the defects, stuttering. Dr. Wallin cites the findings for this type of defect in seven other surveys, ranging in frequency from 1.4 in Belgium to .61 for Danish children, and averaging for all .9. While he found "in a survey of approximately 5000 children of Madison, Wisconsin, in the grades below the high school" that 5.69 per cent were suffering from disorders of speech, Dr. Blanton's results for stuttering, .72 per cent, agree closely with Dr. Wallin's figures, and with the general average so far found. "The average per cent of stutterers from many surveys in this country and abroad," he states,¹⁶ "is approximately .9 per cent." It may be noted incidentally, without comment because the reasons are quite obscure, that speech deficiency in general, and stuttering in particular, is much more prevalent among boys than among girls.

II. Recapitulation

We shall now proceed to note the present status of the education of speech defectives in American city schools. Prior to this examination, it may not be amiss to summarize our findings so far: We have been dealing with a grave handicap whose origin, though some-

¹⁶ See bibliography at end of chapter.

what obscure, is perhaps more largely traceable to psychic causes than to physical. A certain amount of speech deficiency is, without doubt, attributable to physical causes and will, therefore, respond to appropriate surgical attention. On the other hand, much speech deficiency, notably stammering, is deeply rooted psychically, and the remedy must in part depend on the discovery of the original cause.

Many types of this cause will be found mentioned in the literature of the subject—among others, hysteria; unstable nervous system; simple imitation, such as one may notice among children who have occasion to hear a stammering relative or playmate; a sudden shock or fear. This last type of origin is illuminated for us by such old-fashioned expressions as that one is “struck dumb with fear” or becomes “speechless with amazement.” Where the incident leaves a permanent condition we have a speech deficiency that requires attention.

Two other types of origin will interest the reader. The explanation of the extreme Freudians has already been noted. How far this theory can be carried may be seen from this interesting statement by Appelt: “We may, *en passant*, repeat here that writer’s cramp is due to the same influences as those to which stammering is attributed—viz., psychic conflicts and dread. That exactly the same inner resistances which interfere with the normal innervation of speech are at work in the case of a person suffering from writer’s cramp is proved by the fact that . . . those stammerers who, at the same time, suffer from writer’s cramp, are not able to write the very words over which their organs of speech break down.”

Scripture goes further.¹⁷ The "psychic conflicts and dreads" are all attributable to a single cause, it would seem. "Stuttering," says he, "is a psychoneurosis whose essential is the unconscious desire to avoid human society and whose mechanism consists in using ridiculous speech as a means of attaining the desired isolation."

While the correctness of the assertion is still in controversy, many students maintain that the attempt to train left-handed children to use their right hands results in speech deficiency. "Psychological disaster in the form of stammering," says one of these,¹⁸ "is imminent in hand transference. One third of all right-to-left transfers are afflicted with stammering as against approximately 1 per cent of all pure left handers (trained or untrained with transfer tradition) and less than one per cent of all pure right-handers. Stammering is intimately associated with writing with the potentially minor hand, and the traditional transfer of the left handed child to his right hand in writing."

We have no standardized classification of speech defects, nor do we know with certainty the extent of the problem. On the other hand, evidence seems to indicate that we probably have three per cent of speech deficiency among school-children, and that one third of all cases, or one per cent of the population, suffer from stuttering.

Remedial procedure is difficult to outline in a field where so little is known, but it would seem clear that in all cases the first requisite is an examination to determine the character of the defect. This done, an examination of the speech organs would seem to be in order, to deter-

¹⁷ In his *Stuttering, Lispings*, etc. See bibliography at end of chapter.

¹⁸ W. F. Jones. See bibliography at end of chapter.

mine whether it will be possible to eliminate the defect under discussion by medical aid. At any rate, physical building up of the child would always seem to be helpful where we are concerned with a defect involving the nervous system and the need for cultivating self-control.

The next step, and this would include most of the children, should consist in a psychological examination directed toward a discovery, if possible, of the root cause of the speech difficulty. It is always possible that a certain percentage of the children will require the kind of assistance that the psychologist is better prepared to render than is the teacher.

We come, finally, to the function of the teacher, who, it would appear, will have to retain the major portion of the group for training. The work of the teacher will consist, first, of diagnosis or classification, second, of an attempt at eradication. We have seen what the nature of this attempt will be. The problem will be attacked psychologically, in an effort to build up confidence, self-control, a sense of power; an attempt will be made to give the child conscious control of the speech mechanism and ease and smoothness in overcoming his difficulties by means of phonetic drills. Undoubtedly, a general upbuilding also will be undertaken.

But speech work should not be confined to dealing with defects. Positive work, having as its objective the general improvement and, indeed, enhancement of the beauty of American speech, would not be out of place. The time may not be far distant when a complete speech survey will be undertaken of every entering class, and plans laid for speech improvement as a regular part of the school work. The casual observer may note the fact at

almost any time, and in almost any place, that beauty of speech is not one of those matters that take care of themselves. Without cultivation it is rarely achieved.

III. The Work in the City Schools

Extent of the problem—It will be noted from Table IX that this problem of the remedial care and training of speech defectives is receiving some attention in twenty-three of the sixty-eight American cities having a population of one hundred thousand or over. It is probably safe to assume that practically no work at all is being undertaken in that proportion of the population which is not included in this urban group, since nineteen of these twenty-three cities are included in the group having a population of more than two hundred and fifty thousand and of the forty-three cities of a population less than two hundred and fifty thousand, only five have work for this special group.

The cities have, in this table, been listed alphabetically to enable the reader to locate any particular school system. From the point of view of population, the same facts may be noted by referring to Tables I and III in Chapter II.

What is the size of the problem? How many speech defectives are there per thousand of the population? The numbers of children under instruction in seventeen of the cities were secured, and the percentages are shown. From these it will be seen that the variation is so great as to make deductions useless. In probably no instance does the number under care include the total number to be found in the child population of the city. In many cases it is quite frankly the number for whom finances

and availability of teachers allow provision. And if the total information is lacking regarding the probable percentage of all speech defectives, how much more vague the information regarding the percentage of the various types!

TABLE IX

THE CITIES WHICH MAKE SPECIAL PROVISION FOR THE EDUCATION OF SPEECH DEFECTIVES, THE GENERAL ENROLMENT, AND THE NUMBER OF CHILDREN UNDER SPECIAL CARE

<i>City</i>	<i>School Enrolment</i>	<i>Number of children under Special Care</i>	<i>Number in 100,000</i>
Boston	111,138	1126	798
Buffalo	96,228	17	18
*Cambridge	16,550		
Chicago	341,108	1344	394
Cincinnati	66,557	61	92
Cleveland	147,115	1732	118
*Denver	52,396		
Detroit	143,677	2050	1427
*Fall River	17,114		
Grand Rapids	21,980	300	1365
Los Angeles	160,228	371	232
Milwaukee	73,061	266	364
Minneapolis	67,619	300	444
*Newark	97,771		
*New Orleans	53,689		
*New York	1,033,528		
Philadelphia	319,263	500	157
Pittsburg	90,298	375	415
*Reading	20,543		
Rochester	52,464	85	162
San Francisco	70,371	2000	2842
Seattle	60,223	200	332
St. Louis	108,226	120	111
St. Paul	35,411	300	846

* Details not available.

American teachers are beginning to learn that some children, formerly dismissed as stubborn or backward or dull, are speech defectives. Meanwhile it is obvious that the first step to take, after segregating the group of

speech defectives, is to detect those who require medical and not educational treatment. Every child should, therefore, be examined by an experienced medical specialist. Cases of "decided lockjaw deformities, and latent nervous or psychiatric conditions," may well be left to the medical profession. "The chief service that the physician can render the teacher is in finding organic causes of speech defect, or in stating clearly that there are none."¹⁹

It is the group who are not suffering from organic defects or definite psychiatric disturbances who constitute the proper field of labor for the teacher. As to this group, it must be stated that the work is so new and the contributions that have so far been made are so lacking in authoritativeness, the experiments have been so few and the data gathered so unreliable, that, in America, at any rate, the work still remains to be done. We have barely arrived at the point where the physician is receding into the background and the teacher is coming into his own. This teacher is a pioneer. Facilities for his training are lacking, and will so remain until there have been accumulated information and skills that may be transmitted.

Remedial procedure—Here again one finds as great variation of practice as in other phases involving speech defectives. While there is perhaps a certain amount of agreement regarding the need for developing confidence, teaching correct breathing, and the use of the speech mechanism, as well as some vocal exercises intended to overcome certain defects, there is no commonly accepted and universally agreed upon body of practice. Some

¹⁹ See *Proceedings*, National Education Association, 1916, p. 866.

teachers treat each case as an individual problem; others follow certain systems and manuals devised by proponents of particular procedure. Practice in the correction of speech defects seems to be in a decidedly individualistic if not chaotic state.

Percentage of cures effected—In one interesting and encouraging matter all workers in this field seem to be in agreement; namely, *the large percentage of cures effected*. The actual percentages named vary, but the most conservative seem high. Seattle claims cure for forty-five per cent, Chicago claims sixty per cent, and Pittsburg states that three fourths of all the cases are cured. Boston reports ninety-two per cent and New York and Buffalo state that ninety-five per cent of all the cases are cured. These figures are not comparable because the term "speech defective" is vague, and it would naturally be easier to make a good showing with a high proportion of minor defects in the group than if the children handled were predominantly stammerers and stutterers.

More instructive, therefore, are the figures furnished by the city of Denver. In that city, it would seem, cures are effected for the various defects in the following proportion of cases:

Monotony	}	90 per cent
Hasty speech		
Slovenly speech		
Lisping		75 per cent
Nasality		50 per cent
Stuttering	}	40 per cent
Phonetic Defects		
Stammering		
		20 per cent

The city of Grand Rapids reports as follows after one year of work, which means that some of the cases have been under treatment for less than a year; many will doubtless improve with further work:

	<i>Percentage cured</i>	<i>Percentage improved</i>	<i>Percentage with slight or no improvement</i>
All cases treated.....	44	47	9
Stutterers	24	60	16
Lispers	56	38	6
Miscellaneous	34	58	8

How the work is organized—The basic fact to be noted in the organization of this work and in the grouping of children is that they are in all cases taken from the regular room for a specific period daily or weekly and given special work, concentrating on the removal of the defect. The children are also given exercises to be carried on at home, and in many cases the regular teachers are enlisted to aid the child in overcoming his handicap.

The special teachers, in the larger cities and where the work is extensive, usually travel about the city. Sometimes they visit every building, meeting all the children in their own schools, sometimes they confine their traveling between a number of centrally located buildings, to which the children are sent at specified times. Not even the question of whether the work should be done with single individuals or in classes is settled. Where it is done on a strictly individual basis, the time available for each child is, naturally, very short. In Chicago, for example, where this system is in use, the allotment is fifteen

to thirty minutes a week. On the other hand, simultaneous instruction always implies classification, which here means, in addition to maturity status and intelligence inequalities, similarity of type of defect. Where the work is scattered over the entire city, the securing of homogeneous groups seems an almost hopeless ideal.

The amount of time devoted to this work in the various cities varies greatly. The following table shows the available time for each child in the seventeen cities from which information was obtained, and indicates the degree of variation in practice:

TABLE X
TIME PER WEEK DEVOTED TO CORRECTION OF SPEECH DEFECTS IN
SEVENTEEN CITIES

<i>City</i>	<i>Minutes</i>	<i>City</i>	<i>Minutes</i>
Chicago	15 to 30	San Francisco	150
Milwaukee	20 to 30	Los Angeles	30 to 180
Fall River	30	Detroit	150
Denver	60 to 120	Newark	150 to 225
St. Paul	100	Minneapolis	100 to 225
New Orleans	75 to 150	Boston	240
Rochester	90	Grand Rapids	300
Philadelphia	120	Seattle	2 half-days
New York	150		

IV. Conclusions and Recommendations

A number of important conclusions may be drawn from the foregoing study, indicating the need for certain definite steps to be taken immediately if, as seems almost inescapable, the cure of speech defects and the general improvement of speech are proper school activities. Some of these will be noted.

1. **Specialized full-time schools**—The cities which now provide some special work for speech defectives follow uniformly a procedure whose validity may be questioned; they do not establish special schools where all of the child's regular school-work is done. The child is dismissed from his regular class and work for one or more periods each week to meet the speech teacher, in company with other defectives; and his instruction is concentrated on speech correction. This done, he is sent back with instructions for his guidance.

It would seem that the principles, as well of individual as of social psychology, operate against the efforts of the child under this arrangement. While his drawback is with him every moment of his school life, the special instruction is given him more or less isolated from its application in hourly school use. Again, he faces at every attempt to participate in class activities that amusement, so painful to endure, which is normally meted out to defectives among primitive people and children—a state of affairs calculated to induce fear, lack of confidence and of self-respect, which may confirm his defects or, at best, retard recovery.

If children were diagnosed immediately on admission to school, when the defect has been established the least possible length of time, when self-consciousness and a feeling of inferiority have had the least possible opportunity to do harm, when they have the maximum number of years ahead for correction, and if these children were gathered in special schools for full-time regular work, the instruction carried on by specially trained teachers would be always operative instead of sporadic; it would be effective exactly at the moment when the occasion

arises and in connection with regular subject-matter rather than in isolation, and would in other ways make for the maximum benefit of the child.

Such a school would alter its curriculum to suit these children, and introduce the maximum number of exercises calculated to be beneficial as part of the regular work, and without the child's knowing at all times that he was concentrating on a defect. The teachers in such a school would become accustomed to the slower tempo in which oral work must necessarily be carried on, and would not feel the strain on patience that must be felt when the work of a normal class is held up by one stammering child.

Finally, the laws of social psychology, which now operate against the defective, would actually operate in his favor. Not only would he be relieved of the burden of ridicule or even sympathy but, others being exactly in his case, the salutary effects of rivalry would be brought into play. There would be a race for improvement. Instead, therefore, of exclusive teachers of speech, we need regular teachers with this additional training, doing full-time work in regular full-time special schools.

There are other advantages involved: all the medical care, the psychological or psychopathic work, could be centered for efficient operation; systematic observation, experiment, and study could be carried on and the school plant adapted in whatever ways seemed necessary for the purposes of the education of these children.

The foregoing considerations are largely pedagogical, and concern the rapid cure of the pupil. But reasons of an administrative character also favor the central school. Ultimately, the provision of ample teacher-time

for these children will, from the practical view of financial possibility, depend on the solution of the problem of organizing simultaneous instruction. But the carrying on of simultaneous instruction is dependent always on homogeneity within the group taught. Homogeneity in the case of these children represents a most difficult problem. In addition to the usual needs of similarity in age and approximate intelligence, we here face the fact that we are dealing with a group of various defects, rather than with one type such as deafness or blindness.

Under the plan now in use, of scattering the work by having the teachers travel, or even by gathering the children in centers for one or two short periods a week, simultaneous instruction is a practical impossibility. Some of the largest cities in the country are employing the purely individual method, a method by which no city will ever be in a position to offer any child sufficient teacher-time for effective work.

A centrally located school will, in the long run, prove to be the most economical way of using the funds available for this work. It will probably reduce the number of teachers required; it will do away with the need of involving the entire teaching body in the work; it will serve as a center for training apprentices until such time as better teacher-training facilities have been developed; it will make it possible to center psychological and medical work; and it will facilitate the establishment of pre-school clinical and parent-training work; it will facilitate the establishment of special physical education activities of which many of these children are in need.

2. Need for a large-scale, centrally located, well-supported, medical, psychological, and pedagogical experi-

mental station—The outstanding characteristic of this work at the present time is its tentative character and the individualism of the workers in the field. There are good reasons for this comparative retardation and lack of efficiency, an understanding of which may help make for improvement. Educational progress in city school systems has consisted largely in taking over, establishing, and supporting new types of work whose utility had previously been proved, and for which methods had previously been established by private agencies. City school progress has, in the main, not come about by the development of new procedure or new fields of work. When the value of any given work not hitherto attempted had been demonstrated, and a method had been established, the city took over the responsibility and the workers with their method, and by liberal support, extended the field.

In illustration, one may mention at random school feeding, open-air classes, kindergartens, day-nurseries, night-schools, playgrounds and recreation, social center work. Other types of activity will readily occur to the reader acquainted with recent educational history in the United States. In the more technical fields, methods had been worked out by institutions before cities took the work over as, for example, the special problems of method involved in the instruction of the deaf and the blind. Methods for teaching mental defectives have largely been worked out in institutions for feeble-minded. Where no such work has previously been done and the city systems are left to devise technical means, they do not accomplish this as readily as they solve mere problems of reorganization and grouping, as witness the floundering

in the case of the demonstrated need for the special education of the highly endowed.

The basic reason for the slow progress in the education of speech defectives is that no outside agency of importance, and non-commercial in character, has experimented with the problem and established a procedure for the cities to adopt. No important agency is training teachers for the work, establishing pedagogical procedure, discovering causes and methods of diagnosis. The establishment of such an agency is a crying need to-day, perhaps the greatest single need in the field of the education of exceptional children.

This undertaking should be of large dimensions, occupy a long period of time, and be sponsored either by the Federal Government or by one of the private foundations interested in education. It should be established at an American university located in a city large enough to furnish children in sufficient numbers at each age and level of intelligence. The research carried on must be coöperative in character, involving at least three grand divisions: the physician, the psychologist, and the teacher. The work of this last division must be twofold in character, providing for (1) the development of remedial procedure of an educational kind, and (2) the training of teachers for the special work. The training of the deaf and the blind has made splendid progress in America because there are highly competent agencies for the study of methods and for the training of teachers in those fields. The work with speech defectives will await the establishment of similar agencies.

The type of research indicated will ultimately establish a series of recognized causes for the origin of speech

defects that will lead to general education for preventive measures. It will ultimately develop a classification of defects and a method of diagnosis which will indicate which cases belong to the physician and which to the school. Of those which belong to the school, the diagnosis will indicate which types, because of the peculiarity of the origin and for other reasons, require mainly psychological treatment by way of suggestion, psychoanalysis, or otherwise, and which will respond to simple pedagogical methods of repetition, drill, habit formation, and conscious use and knowledge of breathing and speech mechanisms. Finally, the studies and research will result in a trained body of teachers who will work consciously toward definite goals. The splendid work so far accomplished under present conditions would seem to indicate that speech deficiency and the tragic, useless suffering, not to mention the economic loss involved, may be entirely eliminated.

3. **Pre-school and post-school activities**—We are dealing here with a defect which should, from the point of view of cure, receive the earliest possible attention—a defect which frequently becomes definitely established long before the age set for entering school. Even where parents are sufficiently intelligent and serious to desire to do all that lies in their power, there are ordinarily no facilities available for their assistance. City systems should set up central clinics for two purposes: first, actually to attempt the cure of the defect where possible; second, and probably more important, to carry on instruction of the parents of pre-school children who have speech defects, guiding and advising them in the care of these children.

Again, in the case of speech defectives suffering from old established habits who overcome their tendencies only with the greatest difficulty, and whose cure was undertaken, perhaps, late in their school career, the end of school and the beginning of the period of work with the inevitable new surroundings and acquaintances, frequently is so great a tax on the nervous system as to cause or threaten a recurrence. A follow-up system on the part of the department charged with the cure of speech defects, keeping track of the more severe cases for a certain period after the pupils have left school, will prove of the greatest benefit.

4. **The case of the small city and the rural district—**It is apparent that work for types of defect which occur with comparative rarity can be undertaken only by the largest centers, where there is found a child population so large that even a small percentage of the group constitute a sufficient absolute number to warrant the organization of special facilities. What is to be the case of children not situated in the largest centers? Two possibilities suggest themselves. We have become somewhat familiar in recent years with partial consolidation or consolidation for certain limited purposes as opposed to full school consolidation. The union high-school district, composed of a number of elementary school districts which retain their autonomy for elementary school purposes, is a case in point. In a like manner there are many sections of the country where, by virtue of contiguity or fortunate transportation facilities, limited consolidation might be effected for purposes of caring for the education of exceptional children such as the classes under consideration in this volume.

Such consolidation should be authorized by the various state systems and put into effect. Failing this, States and counties might at least establish clinics that would go part way toward offering a solution for these children. It is the custom in some of the American States which do not maintain the usual state institution, for example, schools for the deaf and blind, to pay for the care of these classes in the institutions of neighboring States. It is worth while considering whether in certain instances States, counties or school districts might not be warranted in maintaining these children for a certain length of time at centers where remedial facilities are available.

V. Summary

We have dealt in this chapter with a type of defect which has been less satisfactorily met by the American school, than any other considered in this volume, in which there is the greatest uncertainty in practice, and which presents, therefore, the field in which the greatest amount of work still remains to be done.

We have found the work carried on in but few cities, and these the largest, indicating that, for the great majority of the American school population, remedial care of speech defects has not yet been undertaken. We have found a lack of agreement as to causes of defect, classification of types, character of the instruction to be given; and, in actual practice, large divergence in the amount of time allotted for the work, and the character of the organization for that purpose. We do not know how many of these children there are for each thousand of the population.

This discussion has led to the following recommendations: that these children be gathered in full-time special schools; that smaller cities and rural counties establish coöperation or consolidation for purposes of the education of these and other types of exceptional children; that pre-school work, to take up remedial procedure at the earliest moment, is necessary, as well as post-school follow-up work for the more difficult cases; finally, that a large-scale study in this field under the auspices of one of the American foundations is urgently needed.

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PART IV

**THE EDUCATION OF PHYSICALLY
EXCEPTIONAL CHILDREN**

CHAPTER X

THE DEAF, THE BLIND, AND THE CRIPPLED: INTRODUCTORY STATEMENT

I. Definition of These Classes, and Numerical Aspect of the Problem

It is obvious that there are all degrees of defective vision, defective hearing, and physical deformity, from the slightest deviation from normal to complete incapacity. What is the degree of blindness, deafness, or deformity, which handicaps the individual to the point where he requires differentiated education? By our definition, the division may be roughly made at that point where the child cannot, even with supplementary assistance specially devised for him, be kept with the regular classes. We may note, incidentally, that much effort is, in some systems, being expended on types of "supplementary assistance" which help to retain partially defective children in the regular schools and classes.

The semi-sighted—Particularly in the field of sight conservation is there being done in certain American cities work of the highest possible value. This work has been so well described by Mr. R. B. Irwin,¹ one of its earnest promoters, that we shall content ourselves here

¹"Sight Saving Classes in the Public Schools," *Harvard Bulletins in Education*, No. VII.

with a quotation from his description to indicate something of the procedure.

In buildings designated as conservation-of-vision schools, a room is set aside for the use of children with defective eye-sight. A teacher is placed in charge of the room whose function it is to assist these children to keep pace with the boys and girls enjoying normal eye-sight. All written work is done in the special room. Practically all oral work is performed in the regular grade room with the other children. For example, a fifth grade child does his written arithmetic, map work, reading, written composition, and writing with the special teacher. Oral arithmetic, geography, history, grammar, oral spelling, etc., are recited in the regular fifth grade room. This keeps the sight-saving class pupil in competition with those enjoying normal vision, and guards against the tendency to set special standards applicable only to special groups.

The hard of hearing—The term hard-of-hearing may be used to denote the whole long range between practically total deafness and perfect hearing. There are many hard-of-hearing children, says Miss Adams,² whose definition we have just quoted, who have normal speech and whose education could proceed under normal teaching if they could only hear what was being said. Such children are usually given a front seat and so are able to hear what the teacher says; but they lose all that is said by their classmates and consequently fail to grasp what follows and so drift along with only half-knowledge from day to day. When we remember that modern pedagogy measures the success of a teacher by what she doesn't say, but leads the children to say, it becomes clear that the hard-of-hearing child down front stands a pretty poor show in the rapid give-and-take of an ordinary recitation.

² *Proceedings*, National Education Association, 1922, p. 603.

Fortunately, more thoroughgoing procedure is available in the most progressive centers. "There are children," to quote Miss Adams again, "who have enough hearing to learn to talk imperfectly. They get the principal words of a sentence, usually the nouns and verb-roots and adjectives, but they leave out connectives, prepositions, and inflections—in short, they learn to talk baby-talk in a way that seems fairly normal. They hear pretty well at short range, and in homes where they are given great care they sometimes go on to almost normal speech. But where this care cannot be given their speech remains baby-talk. If they are bright, and are quick learners they sometimes get through the first two or three grades if they are given front seats, mastering the greater part of the subject matter and giving the impression that they are simply defective speech cases.

"They *are* defective speech cases, but their speech is defective because they do not hear the obscure sounds, the prefixes and suffixes and parts of the verb which we Americans slur over and indicate by a half-spoken syllable. If these cases go to the defective speech classes the teachers recognize and undertake to cure the specific defects, and having the children at close range they make some progress; but the trouble is too fundamental for mere speech correction to be effective.

"The mental aspect must be considered. Their whole mental life is blurred and hazy and defective, just as their speech is. The baby-talk the child uses is probably a fair reflection of what he really hears and no correction of defective elements of speech is going to help him permanently unless his whole education is so arranged as to enable him to understand what is said to him and to

give him constant practice in the use of correct English. An hour or two a week spent in improving his speech obviously cannot produce the desired effect. Not only must he have attention to his English but every subject in the curriculum—arithmetic, geography, or history—must be presented to him with a thoroughness and care for detail entirely unnecessary for children with perfect hearing. The speech-defect teacher soon discovers this, and in conference with the nurse proposes a school for the deaf where lip-reading and individual teaching will help out the faulty hearing.”

Temporary physical handicap—“The problem of the crippled child is at bottom a medical one. His first need is always for surgical and medical diagnosis and treatment.” It is only the permanently handicapped child who presents a real educational problem. The temporarily crippled child who is given instruction in the hospital ward or in the convalescent home, or the slightly though permanently crippled child whose needs are met by special desk or by transportation facilities, does not constitute a special educational problem. “Any city board of education,” to quote Mrs. Solenberger again,³ “may usually be persuaded to provide teachers for crippled children on the ground that if they were not crippled they would have a right to instruction in the public schools and teachers would have to be furnished for them. Special seats, cots and blankets for rest periods, equipment for exercises and massage, and sometimes for surgical dressings, liberal provision for the teaching of handwork, free hot noon meals and milk at other hours, and finally the most expensive item, free transportation,

³ See *Conference of Social Work*, Milwaukee, 1921, p. 106.

now usually by motor buses, are responsibilities taken over by the boards of education, in about the order named."

The three special types defined—For purposes of this chapter a blind person is one "in whom the sense of sight either is entirely wanting or is so slight as to be of no substantial utility, or a person in whom there exists little or no visual perception"; ⁴ and "a deaf person is one in whom the sense of hearing is either wholly absent or is so slight as to be of no practical value." ⁵ A crippled child, following a definition adopted by the Education Committee of Birmingham, England, ⁶ is "a person whose (muscular) movements are so far restricted by accident or disease as to affect his capacity for self-support." In the last analysis, it is for self-support that the day school is training children.

Incidence—There is one deaf person for every 2,350 of the general population; and one person of every two thousand of the population is blind. ⁷ In view of the fact that much of this blindness and deafness results from accident or disease occurring in later life, the percentage in the population of school age is still smaller. Only one tenth of the total number of the blind are found among persons under twenty years of age; and as the congenitally deaf account for only one third of the total number, it is quite likely that the percentage among children of school age is smaller than for the population at large.

"We have no authentic information," says Mrs. Sol-

⁴ See Harry Best, *The Blind*.

⁵ See Harry Best, *The Deaf*.

⁶ From Edith Reeves, *Care and Education of Crippled Children in the United States*, New York, Survey Associates, Inc., 1914.

⁷ Federal Census, 1920.

enberger,⁸ a student of the various phases of the social problem presented by the crippled child, writing in 1914, "upon which to base an estimate of the total number of crippled children or crippled adults in the United States." Official figures are still lacking, but another writer,⁹ in 1922, asserts that "it is conservatively estimated, from a basis of many surveys urban and rural, that there is at least one cripple for every four hundred of the population," and, what is more important for educators, "it is found that ninety per cent of the cripples are subjects of charity."

II. Present Educational Status of the Deaf and the Blind

Where are the deaf and the blind being educated?—The problem presented by these two classes is obviously not one of large proportions, but for the persons involved it is of vital consequence. Both of these classes are to-day being educated to a large extent in residential institutions maintained by the various States. Eighty per cent of all the deaf pupils under instruction in the United States in October, 1919, were being trained in public residential schools; the public day schools accounted for fifteen per cent of the total number under instruction; and twenty-one private and denominational schools cared for the remaining five per cent who were attending school.¹⁰ By far the largest number of blind and partly blind pupils receiving education in the United States attend the residential schools. In the school year 1918-19

⁸ In the volume cited in a preceding foot-note.

⁹ Comings, W. R., "Crippled Children and Their Benefactors," *Journal of Education*, Vol. XC, p. 658.

¹⁰ See *U. S. Bureau of Education Bulletin*, 1921, No. 14.

the attendance at the forty-five residential institutions was 4,616 as against 989 attending day schools.¹¹

The reason for these facts is found in the accident of historical development rather than in deliberate educational theory, and the desirability of continuing along this line will receive further consideration in the two following chapters. While the history and the technic of the education of the blind and the deaf has no place in this study, a few facts may be briefly noted.

History and method of teaching the deaf—Apparently nothing of consequence was done toward solving the problem of the education of the deaf until the middle of the eighteenth century. "The seat of the first permanent school to be established in the United States for the education of the deaf was Hartford, Connecticut, and the name of the one man with which the beginning work will forever be coupled is that of Thomas Hopkins Gallaudet."¹² While some efforts to solve the difficult problem of enabling the blind to share in the cultural inheritance of the race date back as far as the sixteenth century, the real work in the education of the blind begins with Valentin Haüy and the "Institution National des Jeunes Aveugles" founded in Paris toward the end of the eighteenth century. The first American school for the blind was established in Massachusetts in 1832.

Our reference to the special methods of instruction must necessarily be brief. "From the beginning of organized instruction of the deaf in America a system of signs has been in use to a wide extent."¹³ In conjunction with the manual alphabet, the system has taken its

¹¹ See *U. S. Bureau of Education Bulletin*, 1921, No. 16.

¹² Harry Best, *The Deaf*, p. 134.

¹³ *Ibid.*, p. 277.

place as a recognized means of education and communication. Another method, as yet not so well established in the United States as the sign and manual alphabet method, is known as the oral method, and undertakes to counteract the handicap of the deaf by substituting lip reading and the conscious formation of words by the deaf, using their speech organism. For the deaf are ordinarily not "dumb." They are speechless because they do not hear. They may, however, as teachers of this method are demonstrating, be given the use of their speech mechanism in whole or in part by other means. The oral method is gaining in popularity and is the sole method employed in most of the city day schools to which reference will be made later.

History and method of teaching the blind—The key to the instruction of the blind, certainly so far as reading and writing are concerned, must be the effort to substitute the sense of touch for that of sight. Obvious though this may seem, the effort to establish a method of raised letters which might be read and in which the blind might write, and which might be universally adopted, has been long and arduous—an interesting history which would not be in place here. Suffice it to say that the system of print known as Braille has finally been adopted for uniform use in all schools, and that the blind write by the use of a special device which enables them to make this print with comparative rapidity.

Residential institution or city day school?—Education of the blind and the deaf in the United States began at a time when city systems were in their infancy, and struggling to develop facilities for the mass of typical children. The schools were established by the States.

Obviously, if they were to have pupils, they must provide residence facilities. The object of providing these facilities was not that they were an essential feature of the education of the blind and deaf; they were a simple necessity if the schools were to have pupils. Once established, the system took root. Not only did it become a characteristic of the schools and develop traditions; it grew physically in the constant extension of plant. The public became accustomed to the appropriation of funds for the education of these classes on the part of the State, and the cities, seeing these children cared for educationally, were slow to enter the field.

But the institutional method of educating these classes away from the ordinary atmosphere in which they are to live, and in the midst of similarly handicapped persons with whom they normally will not associate exclusively, is being challenged on theoretical grounds. Unfortunately, it is rather a law of human institutions that a tradition once established tends to perpetuate itself and, the original reasons failing, new ones not heretofore thought of, are found. Just as the place of the classics in the curriculum was justified for their disciplinary value when the original definitely practical reasons for their inclusion began to be obsolete, so one must expect to meet in this field of controversy arguments probably based not altogether on the best interests of the children to be educated.

The first day school for the blind was established by the city of Chicago in 1900, since which time such schools have been organized in a number of other large cities, among them Cincinnati, Cleveland, Toledo, Milwaukee, Racine, Detroit, New York, Newark, Jersey City, Los

Angeles, New Orleans, and Houston. The first day school for the deaf was probably established in Boston in 1869, since which time nearly eighty others have been organized, forty of them within the present century.

Briefly, the case for the day schools may be summarized as follows:

1. There is no reason for separating these children from their families and normal associations and experiences. They are not typical institution cases, and even in fields where homes are broken up, the current tendency among social workers is to minimize institutional type of care by "placing out," living in cottages, and other methods. The need which compelled boarding in the first place no longer is operative to the same extent.

2. The children are expected, as far as possible, to become normal functioning members of society, not residents of institutions. By living at these schools especially arranged for them, and in association with others of their kind, they are deprived of valuable experience and in fact definitely handicapped.

3. In the case of deaf children particularly, living at home among speaking persons gives scope for a great deal of practice and experience in lip reading and in speech.

4. Children may begin attending school in day schools at a much earlier age than is possible in institutions, an important advantage particularly for the deaf.

Against the day school it is stated:

1. That there are transportation difficulties in going to and from school.

2. That the full-time supervision which the institu-

tion offers is a very important part of the education of the children.

3. That grading for group instruction is practically impossible in the local schools, which are necessarily small.

4. That special curriculum opportunities may be offered in the institutions as, for example, specifically adapted vocational work and music which has played an important rôle in the institutional education of the blind.

5. Normal social intercourse, play, and sports are more easily arranged for in an institution among persons equally handicapped, making possible a happy personal development and the formation of friendships.

6. Some children, by virtue of residence where no day schools exist, or by virtue of improper or unfortunate home environment, are better cared for in institutions.

Need for partial consolidation—Two important problems should be noted before closing the discussion of the education of these children. The case for the institutional care of children, in so far as it concerns arguments inherent in the fact that the group is small—and therefore implies, for example, lack of grading and poorer curriculum facilities—is, but ought not to be, valid. As has been pointed out in preceding pages, special education is expensive and, because the children to be instructed form a very small portion of the population, the expense is not feasible except in the largest centers. Special work, such as the care of health, is equally impractical.

For similar lack of ability in rural districts, other phases of education such as music, supervision, and grading,

consolidation has been urged as a remedy. The time has come when, for purposes of special education, consolidation should be urged on the cities. Wherever centers of population are so located that while politically separate entities they are in terms of geographic contiguity, transportation, and other features single communities, they should unite in maintaining in common, for all the children involved, these special schools. Four large cities bordering on San Francisco Bay, for example, San Francisco, Oakland, Berkeley, and Alameda, or the two large cities of Minneapolis and St. Paul, as well as other communities similarly located, could, to the advantage of the children involved, and with the organization of transportation facilities, maintain in common better schools for handicapped children than exist in any of them singly.

III. Present Educational Status of Crippled Children

A survey of the status of crippled children in America was made, and the report thereof published in 1914, and this volume remains to-day the most reliable general statement of the condition of these children. While more recent and, for classes and schools as part of the American city departments, more extensive, data will be presented in the chapter dealing with crippled children in the city schools, we cannot do better, so far as concerns the general problem, than reproduce here some of the statements from this report. The reader whose interest in the crippled child extends beyond that of the present volume—the place of such children in public day schools—will find this report invaluable for his purpose.¹⁴

¹⁴ See preceding foot-note No. 6.

The educational needs of most crippled children cannot be met in regular school classes attended by healthy children. This fact has been recognized in recent years, and, in consequence, special classes for crippled have been opened in public and private day schools and in many residential institutions.

To meet the educational needs of all sorts of crippled children there are in the United States special school classes organized under two different systems: those connected with residential institutions, and day schools, public or private, attended by children who live in their own homes.

The school arrangements in the asylum homes are determined by several factors. Five of the smaller homes do no educational work themselves but send the children to public school classes; sometimes to special classes for crippled children, sometimes to regular classes. This is usually done for reasons of economy, especially in small homes where there are not many children of school age. The superintendents and managers of some of the homes prefer to send the children to public school classes, as they believe it desirable for them to have some contact with the world outside the institution.

In the majority of cases, schools maintained in institutions are supported by the institutions themselves, but in two of the hospitals, three of the convalescent hospitals, and one of the asylum homes, the teachers are furnished by the board of education of the city in which the institution is located.

Certain general differences in the educational work provided by institutions of the various types may be noted. School work in hospitals is always incidental to

the physical care of the children and is often undertaken because a small amount of study amuses the children and is thought by the doctors to facilitate their cure by occupying their attention, rather than because much educational advance is expected.

In convalescent hospitals or homes, the situation is very different, because most of the children are out of bed and able to attend school regularly. Most of the patients remain for longer periods of time, and a greater proportion than in hospitals are able to do serious school work. Each of these institutions has a school of its own. One convalescent home—the Industrial Home for Crippled Children in Pittsburg—which has a school of its own, sends some of the children who are able to walk to a near-by public school, because the superintendent desires to broaden their outlook as much as possible.

The work for the care and education of crippled children is neither extensive nor well organized. Their city school status will be referred to elsewhere. Other aspects of the problem would be out of place in this volume.

IV. Summary

We have, in this chapter, undertaken a general view of the present educational status of the three types of physically exceptional children with whom we are to deal, prior to a detailed discussion of the problem of each of them from the point of view of the public day school. We have noted briefly that the schools, by various adaptations, are dealing with semi-sighted, hard-of-hearing, and partially crippled within the general group.

The special problems we have defined as concerning the totally or almost totally blind and deaf, and the crip-

pled child whose capacity for self-support is definitely limited. We have noted that there is one deaf person per 2,350 of the population, one blind person per two thousand, and probably one crippled person for every four hundred of the population. While the deaf and the blind have heretofore been educationally provided for in residence institutions established by the various States expressly for that purpose, the crippled have so far received little specific educational attention. What provisions were made have been primarily for the purpose of treatment, surgical and medical, or for recuperation. In the case of the blind and the deaf, therefore, we face, as one of our problems, the relative merits of the day and the residence institution as an educational instrumentality. But in the case of crippled children, extension of facilities must be the main objective.

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CHAPTER XI

THE CITY SCHOOL STATUS OF DEAF CHILDREN

I. Deaf Children in City Schools

The day school movement—We noted in the preceding chapter the fact that there is at present an active discussion as to whether the city day school or the residence state institution is best calculated to care for the education of blind and deaf children. Arguments for and against each of these institutions were outlined, and, for the purpose of the discussion, the deaf and the blind were treated together as presumably presenting a similar problem from this point of view. A study of the data in this and the following chapter will, however, indicate that the movement to establish city school facilities for the deaf is more active than that to establish similar facilities for the blind.

Whether this difference is due to a greater enthusiasm on the part of proponents of the city day school education of the deaf than that exhibited by those interested in establishing similar opportunities for the blind, or whether there are actual reasons to be found in the difference of the problems presented by the education of these two classes, remains to be seen. Whatever the explanation, the facts are clear. Within the population group studied here, there are thirty-one cities which

provide educational opportunities for the deaf, and only twelve which make similar provision for the blind.

In other words, while many cities provide only for deaf children, with one exception all cities which maintain schools for the blind also maintain facilities for the deaf. Only one city has given first consideration to the education of the blind. Further confirmation of the greater activity of the movement for the establishment of city day schools for the deaf than of the similar movement for the blind is found in the fact that in cities of a population less than one hundred thousand there are almost as many more schools for the deaf as those noted in this chapter—probably seventy in all—and practically none for the blind.¹

The data in general—The table which follows gives a list of the American cities in the population class one hundred thousand or over, which provide city school facilities for the education of the deaf. The cities have been listed alphabetically in order to facilitate ready reference where the student is interested in a particular city. For purposes of noting the facts from the point of view of relative population, the reader is referred to Tables I and III in Chapter II. While the percentage of the school population found in the classes for the deaf is noted, it will be seen that the variation is so great as to afford no indication of the probable percentage of the child population who are totally deaf. Many reasons may be offered for this, such as proximity to or distance from the state institution, the presence in the city of private schools, and other factors.

¹See Harry Best, *The Deaf* and *The Blind*.

TABLE XI

CITIES WHICH MAKE SPECIAL PROVISION FOR THE EDUCATION OF THE DEAF, THE GENERAL ENROLMENT, AND THE NUMBER OF CHILDREN UNDER SPECIAL CARE

<i>City</i>	<i>School population</i>	<i>Deaf children under instruction</i>	<i>Number per 100,000</i>
Akron	33,678	15	45
Atlanta	32,682	6	18
Baltimore	106,036	12	11
Boston	141,138	166	118
Buffalo	96,228	8	8
Chicago	341,138	300	88
Cleveland	1,147,115	162	110
Dallas	32,012	30	93
Dayton	25,423	13	51
Des Moines	25,819	17	66
*Detroit	143,677		
Grand Rapids	21,980	28	127
Houston	27,504	15	55
Kansas City, Kan.....	20,442	15	73
Kansas City, Mo.....	61,722	141	228
Los Angeles	160,288	80	50
Milwaukee	73,060	98	134
Minneapolis	67,619	50	74
Newark	97,771	83	85
New Orleans	53,689	9	17
New York	1,033,528	332	32
Oakland	51,774	14	27
Philadelphia	319,263	40	13
Portland, Ore.	44,091	28	64
San Francisco	70,371	44	63
Seattle	60,223		
Spokane	25,710	16	62
St. Louis	108,226	70	65
*St. Paul	35,411		
Syracuse	23,383	16	68
Toledo	30,402	14	46

*Details not available.

II. Problems of Instruction

Two methods in use—While it is not within the province of this study to take up in detail the matter of special methods of instruction, a few facts must be noted in order

to prepare for an understanding of some of the important questions still unsolved in this field. There are two contending methods of instruction, the older and much better established manual method, which includes an alphabet as well as a system of sign-language, and the oral method.

In addition to the manual alphabet, the deaf have in use a system of signs consisting of "gestures, bodily movements, mimic actions, pantomime, postures . . . all appealing graphically to the accustomed eye. The order of signs itself form to an extent a universal language."² By the deaf it can be employed rapidly and with ease, and is readily and clearly understood.

The deaf learn this form of communication readily, and prefer it to any other. It represents to-day their principal means of non-written communication, and is employed almost exclusively by the adult deaf at formal gatherings and in social intercourse. The objections to this method of communication are patent. It sets the deaf off as a class apart. In association with the hearing, it emphasizes their handicap, since their only means of communication under these circumstances is by the well-known method of the pad and pencil. If at all attainable, any method which would tend to minimize the handicap and enable the deaf to associate with the hearing on less disadvantageous terms should be given a trial. As we noted in our first chapter, it is the effort to minimize the handicap that should be the guiding principle in the education of special classes.

For the other method now in vogue in the instruction of the deaf, the oral method, the claim is made that

² Harry Best, *The Deaf*.

this handicap can be overcome. This method undertakes to train the pupil to "hear" ordinary speech by means of lip reading and to communicate by speech, the pupil being taught to form words consciously. Attempt is made, too, to improve the character of the voice, which is ordinarily not pleasing. While this method is in part in use in all schools, the hesitancy of the residence institutions to adopt it exclusively is probably responsible for the rapid growth of the city schools. "The day school may even be said to have entered the field in part as a protest against" the manual or sign method.³ The oral method is used almost exclusively in the day schools.

It is not within the scope of this study to enter the controversy as to method. The question has been raised rather for the purpose of presenting certain problems which face the day schools in their effort to employ it.

Does the oral method have general applicability?—The oral method is employed exclusively in all of the city day schools noted in this chapter, with the exception of Baltimore and St. Louis, where the combined method is employed, i. e., a combination of speech and signs. As a rule the schools employing the oral method are vigorously opposed to the use of the manual or sign method to any extent for the very excellent reason that these methods are so much more readily acquired and so greatly facilitate communication that they serve as an effective hindrance to the acquisition of the more arduous processes of speech and lip reading. But can all of the deaf children be taught lip reading and speech to a degree of proficiency that will make their employment practical?

³ Harry Best, *The Deaf*.

In other words, does this method require certain special aptitudes, or an unusual degree of intelligence, so that it must be admitted to be not of general applicability?

Unfortunately our answer for the present must be based on mere opinion and the opinions are so various as to preclude conclusions. The following question was asked of the day schools: "What in your opinion is the percentage of children who cannot be successfully taught by the oral method?" The range of opinion may be indicated by two answers, one at either extreme. "I believe that any deaf child, not mentally deficient," says a teacher who for twenty-one years has employed the oral method in a city day school, "can be successfully taught by the oral method in a good day school." A number of other cities make the claim that all children can be taught speech, excluding only mental defectives. On the other hand, the responsible officer of a large American city voices the opinion that those who cannot be taught by the oral method are "at least fifty per cent" of the total enrolment.⁴ A number of the cities reply that they are not prepared to state, while others name percentages of children who cannot be taught by this method, percentages arrived at, one is tempted to think, at random: 2, 5, 6, 7, 8, 10, 20, 25, 33. Finally, we may note an enthusiast who knows no limitations. "Every deaf child," says he,⁵ "no matter if born totally deaf and of a low order of intelligence, can be given as much education by the exclusive use of the speech method as it can by

⁴ This city will, in the next section, again be referred to as considering instruction in state institutions preferable and as holding it impossible for any deaf child to master the elementary school curriculum in a city day school.

⁵ J. D. Wright, *What the Mother of a Deaf Child Ought to Know*, p. 56.

any manual, or silent, method or by a combination of the speech and the silent method."

If it is a fact that a certain proportion of the mentally normal children will, for reasons not at present understood, never be able to acquire lip reading and speech and will therefore ultimately be thrown back on the manual method and the sign-language, it is obvious that for those children the years spent in the discovery of the fact are largely wasted. For the present we have enthusiasm rather than objective evidence as basis for the opinion that the method is applicable to all children. One of the most urgent needs in the field of the education of the deaf is the development of a diagnostic test which will enable one to predict a deaf child's probable success with the speech method—a worthy challenge to the workers in experimental psychology. No such test is now available.

The curriculum—There are two special aspects of the curriculum of the schools for the deaf that should be referred to briefly. In the effort to master the standard elementary school subjects, these children present certain problems in addition to the patent one of lip reading and speech, as well as voice training, to be consciously acquired. They in effect do not know any language. The very idea of expression and communication by means of language must be conveyed to them. They are "foreign" in the sense that they have never participated in English speech, but it is more difficult to teach English to them than to the ordinary foreigner because they have no other speech with which to compare ours. This work, as well as efforts to make the best possible use of residual hearing, and other technical work developed for the deaf

as part of the oral method, lead merely to satisfactory mastery of the standard elementary school curriculum.

The question may now be asked whether the curriculum should in some way be directed toward vocational ends in a manner to minimize the handicap of the deaf child in the ordinary activities of life. The answer is readily made and virtually with unanimity on the part of all the schools: whatever practical or vocational training may be necessary, they say, can be taken with the regular classes now provided by all of the larger cities. While a large city like New York may find it desirable to organize this work especially for the deaf, this is not necessary in cases where the child has really been prepared for intercourse with the hearing by lip reading and speech. Most teachers consider it in fact preferable to take this work with the regular classes, and most of them consider that it should begin with the sixth or seventh grade.

High school education—The last problem to be considered is that of the high school and college education of those deaf children who are mentally qualified to go on beyond the elementary school. While some of the teachers feel that the state institutions are best prepared to offer these opportunities, others that special high school provision should be made, and while there is in fact a national college for the deaf at Washington, the proponents of the oral system on the whole logically claim that no special provisions are necessary.

Having mastered speech, they feel that the student should be able to take his work at the regular high school on a par with hearing students.

Practically all cities where the work has been established long enough have cases on record of pupils who have gone on to high school and to college. It is, however, recommended that a special tutor be attached to the high school to assist the deaf pupils in holding their own and in that way help them to overcome a number of obvious handicaps. The city of Chicago, for example, provides this type of assistance for its deaf children during their high-school work. Some of the teachers of the deaf would even send them out to do their upper-grade work either in whole or in part under these conditions.

Pre-school education and parent-training—We come finally to a topic that must receive consideration in almost every case of congenital defect or defect arising in early infancy. "This center acts as a clinic and diagnosing place for prospective pupils," writes the supervising principal of the work in Minneapolis. Every city should maintain a center not only for these purposes, but as well for the purpose of advising and even teaching the parents of deaf children how best to prepare them for effective education.

What knowledge of child rearing there may be found in the ordinary family is knowledge that applies to normal children. In the case of defectives, the most marked deviation from standard procedure ordinarily found is, unfortunately, a too great leniency and lack of rigor; too little demand and discipline; too much of that doing for the child which results in spoiling him; and all this for children who must in reality be hardened to receive more than the ordinary share of hard knocks. The pre-school education of both parents and children should form an

important part of day school work for the deaf. Home visiting as well as central clinical facilities should be stressed.

III. Problems of Organization

Several centers or one school?—In the larger cities the question presents itself whether the children shall be gathered into convenient neighborhood centers located in regular school buildings or whether one central school for the deaf shall be established. While we shall note that, in the case of the education of the blind, there is by no means unanimity of opinion, it is a fact that in the case of the deaf, in the large cities which are called upon to solve the problem because sufficiently large numbers make an actual school possible, this centralization is almost universally in effect and is quite universally favored. In Chicago, for example, there are at present four centers for the education of deaf children, but the supervisor would prefer a single school.

The reasons for the desirability of establishing the single school are obvious. Grading, special equipment permitting of differentiated curriculum, and other considerations in the education of the deaf, such as the provision of a midday meal, special facilities for recreation and vocational training, are made possible by centering the work. The problem of transportation becomes important where the work is centralized in large cities, but the difficulties probably are not insuperable.⁶ It is to be noted, too, that because of the small number of children that can be handled in a class in these schools, it is

⁶Cities which do not actually transport the children in busses frequently allow car-fare.

necessary to have a much smaller group of children than one might at first suppose to establish a graded school, as will be seen from the discussion under the following topic.

Number of pupils per teacher—Two questions were asked in this investigation regarding the size of classes, i. e., "What is the actual size of your classes, and what in your opinion is the ideal size for classes of deaf children?" The replies are summarized in the table which follows:

TABLE XII
SIZE OF CLASSES FOR DEAF CHILDREN

<i>Actual size of classes</i>		<i>Ideal size of classes</i>	
<i>Number of cities</i>	<i>Actual average</i>	<i>Number of judges</i>	<i>Opinion as to ideal size</i>
4	6	1	5
1	7	9	6
6	8	3	7
5	9	4	8
2	10	2	9
2	12	6	10
2	13	1	14
1	14	2	15
1	15		

The table showing the actual number of pupils per teacher in twenty-four cities does not possess great value for the reason that in some of the cities there is found a single class, and the number in the class is primarily determined by the number of children enrolled. Furthermore, in the smaller cities the classes are ungraded and do not, therefore, indicate ideal conditions. Not only would the fact of teaching several grades make a difference; the equally important fact is to be counted with that

where the class is ungraded there is presented a wide range of ages, and, in the teaching of the deaf, younger children will ordinarily under ideal conditions be grouped in somewhat smaller classes than older ones. We may note, therefore, for whatever value it has, the fact that the median size of classes for deaf children in the city schools of the United States is nine, and that the range is from six to fifteen.

More interesting is the result of the question regarding the ideal size of classes for these children in graded schools. Twenty-eight experienced students of the problem answered the question regarding the ideal number of pupils per teacher, and the range, strangely enough, is from six to fifteen, paralleling the actual practice. Part of the extent of this range is doubtless explainable by the fact that no request was made for distinction between the younger and older children. However, it is very important to note that only three out of twenty-eight replies place the number at more than ten, and that the median number is eight.

Certainly the desirable number is somewhere between six and ten, the opinion of twenty-four of the judges falling within this range. Were a distinction to be made as between the number per class of younger and older children, even greater closeness of agreement would probably be arrived at by these twenty-four students of the problem, the younger children requiring smaller classes, and the older ones being capable of grouping in larger ones.

Number necessary to warrant city day school; "consolidation"—The obvious deduction from the foregoing is that any city which contains in its child population

somewhat more than sixty totally deaf children who would be willing to attend day schools in preference to residing in an institution can establish a fully graded school, and cities which have as many as forty children or even less can establish a partially graded school.

Where children are not available within the corporate limits in the necessary numbers, but where there is a populous surrounding territory, or another city contiguous and divided merely by political but not geographic barriers, consolidation limited to the specific purpose of the education of one or more of the special classes may well be considered. This question was discussed at some length in the last chapter.

Length of the school period—Do these children require a longer total period than hearing children to complete the work of the elementary school? If so, should they be sent to school earlier, should they stay in school until a later age, or should they both enter earlier and stay later? Strangely enough, one does not find unanimity of opinion among those nearest to the problem. Five of the cities do not admit children until age six, and do not believe an earlier age desirable. In several cities where children are admitted at age six, the teachers would consider it preferable to admit them at age five. Six of the cities admit children at age five and consider that the proper age.

On the other hand, there is a strong current of opinion in favor of admission at a very early age. Children are admitted as early as age four in Des Moines, Milwaukee, Minneapolis, Portland, Spokane, and Toledo. Children may be admitted as early as age three in Chicago, Los Angeles, Oakland, and San Francisco. Children are ad-

mitted as early as age two and a half in Dallas, and the opinion of the authorities in Buffalo and Seattle is that they should be admitted as early as possible. The reasons for the belief in early admissions are two: the desirability of beginning speech work as early as possible, and the desirability of bringing under school discipline and school habits children who otherwise are overindulged in their homes because of their handicap. Then, again, the ordinary home and the ordinary parents do not furnish the particular opportunities necessary to overcome the handicap of deafness.

When we come to a consideration of the other end of the period of school training, we find the same differences of opinion. While the idea is expressed by one of the cities that the compulsory period for deaf children should extend to seventeen, by seven cities that it should extend to eighteen, and by two cities that school attendance should be compulsory to age twenty-one, five of the largest cities—Boston, Cleveland, Philadelphia, Portland, and St. Louis—are opposed to any distinction in this regard between hearing and deaf children. At least four States—California, Illinois, Michigan, and Minnesota—have special compulsory school legislation on their statute books. "We now have a State law granting \$250 per pupil between the ages of four and sixteen," writes the supervising principal of this work in Minneapolis, and "our aim is to have this age limit extended to twenty-one."

Information on the same point was sought by means of the question, "How long does it take the average child to complete standard or nearly standard elementary school work?" but the variation in response is so great

as to make the information obtained of little value, an indication of the lack of standardization in this work. While one enthusiastic reply is made to the effect that the work can be done in the eight years available for hearing children, most of the schools state that more time is required, particularly in the case of children who have always been deaf, the answers ranging from nine to fifteen years, with twelve as the most frequent age mentioned.

Many of the schools admit frankly that they cannot say, others state that there is great difference among pupils in this regard, while two cities go to the extreme of disbelief by stating, in the one case that many children can never complete the work, and in the other that no children ever do complete the work. Naturally enough, this last opinion comes from the same city which made the statement that institutional education of deaf children is preferable to city day schools.

IV. Should City School Systems Enter the Field?

After all, the ultimate question involves not so much available numbers as an answer to the question whether the cities are warranted in entering this field. If they are so warranted, if the establishment of these schools seems a desirable and necessary step, ways for doing so will be found. The fact of the increase in the number of cities maintaining facilities for the education of these children would seem to indicate that there is a growing opinion in favor of this action. The case for and against, including both the blind and the deaf, was in a general way outlined in the preceding chapter. We may note here the opinion, as gathered in this questionnaire, of

those engaged in the actual work in the cities, on the desirability and the advantages of city day schools.

The object of the study at this point was to get the day school to face the issue and formulate a reply to the allegation of its shortcomings and drawbacks. The attack was made from two points of view. The schools were asked, first, whether it was a fact that the day school labored under disadvantages because of its inability to grade its pupils and to furnish as good facilities for vocational education as the residence institutions. In the second place, the schools were asked to make a statement regarding the advantages of the residence over the day schools, and as to who should attend these state residence schools.

We may consider the matter of curriculum first. Five of the cities made no reply. Among the others there was no complete unanimity of opinion. As to facilities for vocational training, while seven cities admitted that the residence institutions were better situated in this regard, twelve denied it. The explanation of those cities which deny the superiority of the residence state institution in the matter of training for vocation seems convincing. By the time the child has reached the point where industrial or trade training should begin, he may be sent to the regular vocational, trade, or other schools and classes provided by the city. His previous training has been carried on exactly with this end in view, and it is better for the deaf child to be trained side by side with his normal fellows, those with whom he will work side by side later. The largest cities can meet the issue from still another angle. The New York City schools maintain a full trade department for the deaf and a placement

service, which locates graduates in work suited to their ability.

Twelve of the cities admitted the advantage of the state institution in the matter of ability to grade because of the presence of larger numbers, but eleven denied this advantage either because of compensating advantages inherent in the city school or because this school does afford grading. As was pointed out in the preceding section, a city which enrolls fifty or sixty children can maintain an almost completely graded school. Thus New York, Chicago, Cleveland, St. Louis, Milwaukee, Newark, Minneapolis, and other cities report that they maintain fully graded schools.

The last-named city, for example, with a population of approximately three hundred and eighty thousand, enrolls fifty deaf children and provides for them, in six rooms, an almost completely graded school. This means that any American city in the population class of four hundred thousand or more, and any American city of a smaller population but so located that it is the center of a population of four hundred thousand and reasonably accessible by transportation facilities, can maintain a graded day school for deaf children, unless very special reasons, such as the location within the city of a state institution, intervene to reduce the normal expected enrolment. But even where complete grading is not possible, the schools by no means admit that the state institution has the advantage. They claim that the existence of small classes and the advantage of living at home and in contact with hearing people more than outweigh the drawback of lack of grading in the city day school.

What, then, are the advantages of the residence state

institution that might deter city systems from undertaking this work? Of the cities replying to this question, there appears one clearly expressed preference for the state institution and, with this exception, unanimous enthusiasm for the city schools. The director of special education of one of the largest American cities expresses the opinion that the state school offers "better training for all who can be put there." The particular city evidently acts on this theory, for its enrolment of deaf children is less than one fourth that of another city considerably less than half its size, an eighth or less of the number that might be expected. Presumably the director of special education is not necessarily expert in every particular field of the education of handicapped children, and it would be of interest to know what the person in actual charge of the work thinks on the subject.

The children who, according to the day school advocates who answered this questionnaire, belong in the state institutions may be grouped into four classes as follows: (1) Those children belong in institutions who cannot attend day schools because of unsuitable home conditions. In the case of these children the institution is more capable of furnishing continuous supervision and general training; it is naturally adapted to care for orphan, dependent, and neglected children. (2) A second group whom the city schools would consider as properly within the jurisdiction of the state institutions are the dull, the feeble, and the chronically incorrigible. (3) Children who live in small towns or in the country proper, and cannot, therefore, be sent to day schools, must be sent to the state institutions. (4) Finally, there are admittedly certain children who are mentally deaf, i. e., constitutionally

incapable of learning speech. As the city schools are almost uniformly committed to the oral method, they feel that those of the deaf child population who cannot master oral speech belong in institutions.

The reasoning which concludes that these four classes are properly suitable for institutional education is by no means purely educational in character. Children of poor homes, incorrigibles, and feeble-minded are typical institution cases whether they be deaf or hearing. They belong in the institution for social rather than for educational reasons. The fact remains, however, that their education could not be carried on in the institutions ordinarily provided for incorrigibles, the feeble, and the dependent, so that a specialized institution for their care is inescapable.

Under these circumstances it seems deplorable that otherwise normal children from good homes should be sent to the institutions merely because they reside in the country. Yet they are better off in this respect than children with other handicaps such as speech defect or deformity, since for these classes no state facilities are available to equalize the superior advantages of city children similarly afflicted. In the case of only one of these four classes do we come to a group who seem to belong to the state institution for really educational reasons; namely, the children who cannot avail themselves of the educational advantages of the city schools because of their inability to master lip reading and speech.

V. Summary

The movement for the establishment of city day schools for the deaf is more vigorous than the similar move-

ment in the case of the blind. Not only are there in cities of one hundred thousand population thirty-one schools for the deaf as against twelve for the blind; in the remaining cities of less than this population, there are even more schools for the deaf than the thirty-one studied here, and probably none or, at best, one or two for the blind. The number of children enrolled in these schools in proportion to general enrolment in the particular cities is so varied as to preclude deductions regarding the probable number of deaf children per thousand of the school population.

Several problems of organization are studied in the chapter. It is almost unanimously agreed that the children should be gathered in a single center, because of the possibility of grading and for other advantages involved in centralizing the work. The median number of deaf children per teacher found in this group of cities is nine. The ideal number per teacher is probably between six and ten, a smaller number for younger and a larger number for older and more advanced children. This means that a city which contains, or is the center of a natural geographic community of a population group which contains sixty or more deaf children, can maintain a fully graded day school for them; and where there are less children a partially graded school can be maintained. Where transportation facilities are available, consolidation of outlying territory with the city, or of two cities, should be effected for this limited purpose of the education of special classes.

This raises the question of the desirability of establishing the day schools. While the arguments for and against were outlined in the last chapter in a general

way, including both the deaf and the blind, the day schools were, for purposes of this study and this chapter asked (1) to answer the charge that they have certain drawbacks when compared to the state institutions and (2) to make a statement regarding the type of child who, in their opinion, would be better cared for in these institutions.

The most important points to be considered under the first of these problems concerns grading and vocational training opportunities. As to grading, the cities which cannot offer completely graded schools maintain that this deficiency is more than compensated for by the other advantages of the city school such, for example, as the association with hearing persons and living at home. As to vocational opportunities, while some cities like New York are large enough to organize industrial training for deaf children alone, others maintain that no such facilities are necessary. They claim that it is an advantage to place the child, for purposes of this training, side by side with hearing children, favoring the commencement of this practice with the sixth or seventh grade.

We come then to the request that these city schools state which children in their opinion would be better cared for in the state schools. Four types of children are named as properly belonging in state institutions: (1) children whose home conditions are unsuitable for their upbringing, (2) the incorrigibles and the mentally deficient, (3) country children who do not live near day schools, and (4) children who are not capable of learning speech.

The first two groups mentioned are typical institution cases. They belong in the residence school for social

rather than educational reasons. All the more pity, therefore, that normal children should be compelled, merely because of the accidental fact of living in the country, to attend a school where these institution cases are perforce segregated. That for them this represents a poor educational opportunity compared with that available for city children,⁷ is made clear by the fact that the fourth group do represent a real educational problem and cannot be taught in the city schools because of a peculiar abnormality frequently referred to as "mental deafness."

There is a lack of agreement regarding the length of time that deaf children should ordinarily require to complete the standard elementary school curriculum, but the tendency seems to be that they should have considerably more time, probably twelve years instead of the eight required by hearing children, and that this additional time should be provided at both ends—by earlier entrance at school and a later age for compulsory education.

We come now to several important problems in the field of instruction proper. There are two general methods of instructing the deaf: (1) the manual and the sign method, including an alphabet and a large number of signs; and (2) the oral method, which undertakes to minimize the handicap of the deaf in dealing with the hearing, by teaching them lip reading and speech. The latter method is employed almost exclusively by the city schools. The most outstanding problem in the education of the deaf is represented by the question whether the oral method is of uniform applicability, whether it can be mastered by the ordinary child of average intelligence.

⁷ Assuming, of course, that the reasoning of the city schools is correct.

At present no reliable answer to this question exists. The most challenging problem in the field of the education of the deaf to-day is that of devising a diagnostic test that will enable a decision to be reached as to the aptitude of a child for the oral method. Until the fact has been established as to how large a proportion of the mentally normal deaf population can be taught speech for practical purposes, the controversy regarding methods cannot be regarded as settled. The arguments for the oral method are certainly alluring. Its advocates are devoted and enthusiastic. But they still carry the burden of proof.

The curriculum of the deaf schools, aside from the technical deaf subjects—language forms, lip reading, speech, voice training, rhythm, and the conservation of residual hearing—presents no special problem. In so far as emphasis on industrial and vocational training, household arts, and other practical manual work and the acquisition of skills may be desirable, the day schools consider that the deaf child should avail himself of the facilities now generally provided by progressive cities for hearing children. After all, it is for this very intercourse with the hearing that the oral method has been preparing him, an intercourse that must continue throughout life.

Where high-school education is advisable, the tendency of the city schools is to insist that the child's training should have prepared him for regular work in the standard high school, although it may be desirable to attach to the high school staff a special tutor charged with the duty of giving the deaf pupils assistance to make up for the many things in the class-rooms and the general life of the school that must inevitably escape them. These

city day schools, drawing the logical deduction inherent in the claims of the oral method, do not believe in the special high-school facilities available for the deaf in the state institutions, or in the segregated college for the deaf maintained at Washington by the Federal Government.

One point remains to be noted. For reasons similar to those already explained in the chapter which dealt with the education of speech defectives, city school systems which maintain classes for the deaf should also maintain a central clinic for diagnosis and advice to parents regarding the training of these children. In practically all cases, pre-school care of defective children and home contact for that purpose are essential.

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CHAPTER XII

THE CITY SCHOOL STATUS OF BLIND CHILDREN

I. The City Day School

The day school movement—Although the advocates of the day school for the blind are as eager and as enthusiastic as those interested in establishing similar facilities for the deaf; although the reasons for establishing the work would at first sight appear as cogent for the one class as for the other; although, as a matter of fact, blind children become educable in classes with seeing children at an earlier age than do the deaf; the fact remains that the movement to establish city day school centers for the blind does not compare in rapidity with that for the deaf. While there are thirty-one city day schools for the deaf in the group of cities under consideration in this study and more than that number in the smaller cities, there are only twelve such centers for the blind in this group of cities and few, if any, in the cities of less than one hundred thousand population. While many cities maintain school facilities for the deaf alone, there is only one city which maintains work for the blind and not for the deaf.

It is quite possible, as Best says, that the rapid spread of the day school movement in the case of the deaf is due to the controversy over method which distinguishes the day school from the residence state schools, and that

the absence of any such impetus accounts for the slower progress of similar schools for the blind. It is possible, too, that the slow progress is due to a definite inferiority of opportunity which the day school has not yet overcome. To this aspect of the problem we shall return later.

TABLE XIII

THE CITIES WHICH MAKE SPECIAL PROVISION FOR THE EDUCATION OF THE BLIND, THE GENERAL ENROLMENT, AND THE NUMBER OF CHILDREN UNDER SPECIAL CARE

<i>City</i>	<i>School enrolment</i>	<i>Number enrolled</i>	<i>Number per 100,000</i>
Buffalo	96,228	19	20
Chicago	341,008	46	13
Cincinnati	66,557	65	98
Cleveland	147,115	40	27
Detroit	143,677	14	10
Los Angeles	160,228	14	9
Milwaukee	73,060	42	57
Newark	97,771	22	23
*New York	1,033,528		
Seattle	60,223	9	15
St. Paul	35,411	18	51
Toledo	30,402		

* Details not available.

Present status—In the table which follows, the cities maintaining day school facilities for blind children are listed alphabetically for purposes of ready reference. For purposes of comparison in terms of population, the reader may turn to Tables I and III in Chapter II. The school enrolment is given and totaled in each instance in order to see whether any conclusions may be arrived at regarding the percentage of blind children found per thousand in the school population. As a matter of fact the percentage will not be found of value. Aside from the fact that it is not possible to know what proportion

of the blind children in the various cities have preferred to go to the residence institutions of their particular states, it is possible that, despite efforts to avoid it, the partially blind who are being given training for the sake of sight conservation, and who are not included in this study, have nevertheless been included in the figures submitted. (See Table XIII on page 268.)

II. How the Work Is Organized

Several centers or one school?—We face, in each of the chapters in this study which deal with particular groups of non-typical children, the question whether these shall be gathered for educational purposes into a single center or kept throughout the city in the several schools to which they belong because of residence or (and this seems more practical) in a number of selected school buildings. Our answer in the case of the classes so far dealt with has favored centralization from both the administrative and the instructional points of view. In the case of the totally blind, however, we reach a group whose educational interests seem, in the opinion of teachers, to require a diffusion in the general population, regardless of the administrative convenience or secondary instructional purposes that might be served by centralizing the work in a single school.

Present practice—The practice almost uniformly followed and the practice almost uniformly approved of in the city day schools for the blind is one that involves keeping them in a number of buildings throughout the city. The advocates of the education of the blind in city schools feel strongly that the daily intercourse with seeing children represents one of the greatest advantages

of the day schools. "We do not want to bring them together in great groups," writes the supervisor of this work in Cincinnati,¹ "where abnormal standards and ideals will prevail. We hope to show blind children how to compete with the seeing, and what it means to live in a seeing world."

Blind children should be diffused in the general school population, writes the former supervisor of the work in Cleveland and other cities in Ohio.² "I do not believe there should be more than eight or nine blind pupils in any one building," he states. "I believe that it would be better, if we could finance the plan, to have every blind child of normal mentality who has had normal school opportunity, in regular classes with sighted pupils for practically all of his work. . . . In Cleveland we have no more than two blind pupils in any senior high-school building."

"The plan for operating classes for the blind," says the supervisor of this work in another American city,³ "is about the same in all cities of this country. A school of the district, easy of approach by various carlines, is selected. . . . The plan is to have small classes operating in different centers, to the end that an appropriate ratio [of pupils per teacher] may be maintained, and that there may not be too many blind in one school. In the chosen school a convenient room is set apart as the home room of the children; there, from the special teacher, they learn to read and write embossed print, to use type slate, Braille writer, typewriter, to use clay, to draw with

¹ Estella Lawes.

² R. B. Irwin.

³ J. G. Paterson, "Education of the Blind Child in Public Day Schools," *Outlook for the Blind*, Vol. XV, p. 70.

tacks on cushions, etc. There, also, they get additional help in the subjects of their grades. Various kinds of handwork are done in the room, and what indoor games and physical exercises seem feasible. . . The hours which an ordinary child spends on art, penmanship and kindred subjects, the blind child is in his home room."

The small city and the blind child—Certain corollaries follow. If even the larger systems keep their children scattered throughout the city in groups representing the capacity of one teacher to care for them, regardless of age or grade location, and employing no special and expensive equipment, then any city which contains as many as five or six totally blind children can enter the field on the same basis of efficiency as the largest city. If, therefore, city participation in the education of the totally blind is proper, then considerably smaller cities than those here studied are in a position to engage in this work. When to these considerations is added the fact that the same teacher could be used in sight conservation work for those of poor vision, it may be conservatively stated that every city which has a population in excess of fifty thousand could and perhaps should establish at least one center for the blind and the children of notably defective vision. X

The difficulty of transportation also becomes somewhat simplified by this form of organization. It is not necessary to travel an unusual distance. Seeing children who live in the neighborhood and attend the same school as the blind children become available as guides. Even where only selected schools are in use, a brother or sister can sometimes be transferred to the school attended by the blind child. Where guides must be furnished, or car-

fare paid, as is the case in some cities, the problem in a large city is simpler with this organization than it would be if all the children were gathered in one central school.

All of these considerations hold if the premise is sound, i. e., that a central school for all of the blind children in a given city is not desirable. This basic assumption will, however, be challenged as we proceed to a consideration of other aspects of the problem of the education of blind children in city day schools.

Disadvantages of the present practice—One of the reasons always noted in favor of centralization is the facility that it furnishes for grading, for the formation of homogeneous groups. Obviously the system of neighborhood centers favored by the teachers of the blind in cities makes close grading impossible. But it is to be remembered that these teachers do not favor the entirely segregated education of the children at the centers. They favor intercourse with seeing children, not only by locating the work for the blind in the regular buildings, but also by having these children do as much of their work as possible with the regular grades to which they belong. It is only for the purpose of teaching the technical subjects which the blind alone must master that segregated instruction is favored.

But this is no small task even for seven or eight children, where these are scattered over the several grades, as may be noted from a listing of some of the tasks of this special home-room teacher of the blind: ⁴ "devising tangible illustrations and diagrams for special topics; transcribing into Braille the daily blackboard work in

⁴See preceding foot-note.

arithmetic, spelling, etc.; transcribing into script form for the grade teacher's use, mechanical calculations and embossed recitations or tests."

This imposing list of tasks, which really represents so many handicaps to be overcome on account of the insistence on co-education with the seeing, tasks in addition to instruction in the technical subjects for the blind, and which would become unnecessary in a special school for them, by no means exhausts the problems of the teacher. The schools and the classes change their texts and reading material very frequently, and versions in Braille to meet these changes are, naturally, rarely available. This means, presumably, that the teacher must undertake either to transcribe or to read aloud.

Finally, it may be noted that "keeping up" under this system would tax the capacity of both teacher and pupil. Special work for the more highly endowed can hardly be dreamed of. Yet the blind differ in capacity exactly as do the seeing, and a special school organized for the blind alone, freed from the seemingly gigantic burden involved in "keeping up," would certainly permit of differentiation on the basis of capacity. X

It would seem unavoidable under this system that certain work which requires equipment, as, for example, industrial training, and certain work which requires specialization on the part of the teacher and must be taught to the blind alone, as, for example, physical and trade training, might suffer from this lack of concentration, and to that extent make the day school a poorer opportunity than would be available in the residence schools. To this subject we shall return.

III. Problems of the City School

Number of pupils per teacher—While the number of children per teacher actually found may not indicate the ideal maximum or minimum because of the exigencies of enrolment, it happens that the facts found coincide rather well with this ideal as expressed in the opinions of those in charge of the schools. The range in size of class in the cities studied is from seven to ten, the median size nine. Few of the teachers name less than eight as the desirable size of the group, and only one of the cities mentions as high a maximum as twelve. A class of nine or ten would seem to be the desirable size.

The curriculum and the length of the period of schooling—As we have seen, there are several special subjects in the curriculum of the blind, i. e., the reading and writing of embossed type, and the use of the typewriter for purposes of written communication with the seeing. The blind require, in addition, because of their handicap, specialized work in physical education and in manual work. The problem of industrial training will be discussed later. The state institutions have hitherto stressed musical training, an emphasis which would not seem to be warranted. The mere fact of blindness would hardly seem to endow a person with peculiar musical aptitude, although it may develop keener auditory acuity. In the case of those few who do have special musical aptitude, an avenue for special development seems indicated. Certainly, for those few, it is even more desirable than for the musical persons of normal sight, to develop the special ability.

Unlike the teachers of the deaf, the city-school teach-

ers of the blind do not seem to feel the need for a longer period of compulsory education. They would have the blind child treated in all respects the same as the hearing. They do not think it necessary to establish special college or high-school facilities. At the same time, an interesting report is made of the use of certain time not employed by seeing children in school for additional intensive work, i.e., a longer school day, Saturday classes, summer sessions.

Home contact—In dealing with normal children, city systems are constantly enlarging the scope of their contact with the home. Nurses, truant-officers, and, more recently, visiting teachers, are finding their way into the homes of certain of the children with the view of furthering their educational welfare. In dealing with handicapped children, this question of home contact becomes very much more important. Whereas in dealing with normal children the school seeks contact only in the case of a small proportion, usually for social reasons, where the home background by reason of poverty or vice or ignorance requires attention, in the case of handicapped children contact is essential in every instance.

The reason for this is apparent. The average home, at its best, is prepared to rear the normal child. Such ability as is possessed by the population at large in the rearing of children rests on tradition, transmitted information. But the proper rearing of handicapped children presupposes special information and skills not ordinarily possessed by the parents of these children. So long as the children remain at home and are not sent to institutions where persons specially trained in the nur-

ture of children suffering from the particular handicap may be found, home contact is essential.

In the case of the education of the blind, this home contact ought to be of three kinds: pre-school training, social training during the school years, and after-school contact. The need for the careful pre-school preparation of blind children for life in terms of their handicap can hardly be exaggerated. Every school system, even those which do not offer school facilities, should organize a department that will give information and advice to the parents of blind children.

There is at present in the ordinary home a tendency to make the handicapped child helpless, to soften instead of hardening him. Yet this hardening process must go on, psychologically quite as much as physically. The blind child requires a philosophy of happiness, a point of view for which he must be ever so carefully prepared. The special psychology of the handicapped, studied in detail for each handicap, is still a closed book. It will be the work of the department of home contact to develop the information so badly needed.

The social training phase of home contact has been sympathetically described by Mr. Irwin and will be repeated here in his words:

Perhaps the social education of the blind child is the most difficult problem confronting the Day School teacher. The sightless child must be taught to live with other people, and to be, so far as possible, undistinguished from them in ordinary social intercourse. The efforts to have him play with seeing boys and girls upon the playground at recess time requires the constant and persistent endeavors of the special teacher and taxes her ingenuity to the uttermost. The crowded conditions of the playground during these brief periods of recreation makes the more deliberate forms of play little short of impos-

sible. This is usually supplemented by especially directed games instituted by the teacher during the physical exercise periods and at other times, to which a preponderating number of seeing children are as a "special privilege" invited.

The blind child is encouraged to make friends among seeing children in his neighborhood. This making of friends on his own street is greatly facilitated by the training which he derives in the especially directed games in school—but this requires the coöperation of the family. It is part of the duty of every Day School teacher to visit frequently in the homes of her pupils.

IV. Is the City Day School Needed?

It would seem, from our discussion so far, that the inauguration of day school work for blind children is attainable for centers of comparatively small population. Wherever there are as many as eight or nine blind children willing to attend the city schools, establishment of the work becomes feasible, and on as good a basis as that of cities which enroll a much larger number. The question, therefore, becomes definitely pertinent whether the establishment of city school educational facilities for the blind is desirable. So far the progress in establishing these schools has not been great. Is this due to inertia or to a defect inherent in the city day schools, making them inferior to the state institution?

An effort was made to secure the opinion of those in charge of the work in city schools, and two questions were put for this purpose, inquiring, first, whether the city schools were under any disadvantages compared to the state schools, and, second, what the advantages of the institution were, and who should attend these residence schools.

Which children should attend the state school?—

Four classes of children were mentioned who might find the state institution more advantageous than the city day school; namely, (1) those children who cannot attend day schools because of unsuitable home conditions; (2) children who are dull, feeble, and chronically incorrigible; (3) children who live in small towns or in the country proper, and cannot, therefore, be sent to city day schools; (4) children who require industrial or vocational training. The schools admit, on the whole, the superiority of the state institutions in the matter of equipment and instruction for industrial training.

Three of the classes mentioned, namely, children of poor homes and those who are incorrigible or mentally defective, are typical institution cases whether they be blind or seeing. They belong to the institution for social rather than for educational reasons. The fact remains, however, that their education could not be carried on in the institution ordinarily provided for incorrigibles, the feeble, and the defective, so that a specialized institution for their care is inescapable. Under these circumstances it seems deplorable that otherwise normal children from good homes should be sent to an institution merely because they reside in the country.

The city training cottage for country children—A very interesting method, indeed, for meeting this problem of sending children from country districts to institutions for other than educational reasons is provided in Cleveland, and may be described in the words of the supervisor of education of the blind in that city: "I believe," he says, "that pupils [whose homes are in the country and who, therefore, necessarily go to state institutions] would receive a better training for life in

the sighted world if provision were made for boarding pupils in various centers of this state. This boarding might in some cases be in private families or it might be in small training cottages accommodating not more than a dozen. These pupils could then attend the regular public schools, returning to their homes every week end. This plan is financially possible in Ohio, owing to the fact that the State allows the cities \$250 a year for the boarding of such blind children. In Cleveland, we have a small training cottage for blind girls which receives a few pupils from neighboring towns, as well as providing special social and domestic training for girls living in Cleveland."

The problem of industrial training—We come then to the main point in which the city schools admit the superiority of the state institutions; namely, industrial training. In this regard most of the cities admit their deficiency. The city schools ordinarily confine themselves to the standard elementary school curriculum; some of them give a little manual training; some of them undertake to provide physical education; some of them undertake to stress music. In a few instances trade training is attempted, work being limited to the following trades (no one city provides all of this work): piano-tuning, rug-weaving, brush-making, dictaphone work, typewriting, manual training, basketry, and broom-making. +

When the work of all cities and classes is grouped and catalogued in this manner the list sounds somewhat imposing, but the reader should bear in mind the conditions under which the work is carried on: scattered groups of seven or eight in charge of a single teacher, gathered without regard to age or grade. The work at its best is

modified by partial centralization and is described by Mr. Irwin as follows:

In the room set aside for their use [when they are not attending regular classes with seeing children], they receive part of their sewing lessons and most of their musical instruction given by special sewing and music teachers who visit the room at certain set periods. Chorus work, manual training, employing the use of tools with wood, and gymnasium work, are usually conducted after the regular school hours in special classes in a school building in the center of the city.

We face here two important questions: First, is industrial training an essential part of the education of the blind? Second: if so, is it possible for cities to make provision for this work? In reply to the first question, one of the leaders of the day school movement frankly makes a negative reply. "I am not much of a believer in industrial education for blind children," he writes. "The institutions have tried this for ninety years and very few of their graduates are working at the trades they learned in school. Piano tuning and in rare instances broom-making, are exceptions to this rule. Most of those who are working at broom-making learned their trades after they left the school for children. If we give them a thorough manual training course and provide piano-tuning for the selected few and then provide a vigorous follow-up system, most of our pupils will do fairly well. If our schools for the blind would spend the money now used in industrial training on follow-up work and would provide first-class manual training courses, their records of self-supporting former pupils would be much more encouraging."

But the fact that the state institutions have failed in this most important phase of education does not seem

to be a valid reason why the cities should not attempt it. The present writer believes in the validity of the principle laid down in a former chapter for the education of handicapped children; namely, the basic principle guiding the education of handicapped children should be the endeavor to minimize and compensate this handicap by educating for types of activity where it matters least. If this principle is sound, it is absolutely essential that those responsible for the training and education of the blind make an effort to minimize their handicap by training them for self-support.

It is indeed true that the state institutions have so far failed in this regard. "According to the returns of the United States Census for 1910, of the 55,473 blind persons over ten years of age, 9,321, or 16.8 per cent.—about one in six—are gainfully employed. Of this number, 7,976 or 85.6 per cent. are males, and 1,345 or 14.4 per cent. females. The proportion of the general population of the same age so reported is 53.3 per cent., or a little more than three times as great. The proportion of blind males gainfully employed is about one fourth, or 25.3 per cent., while that of males in the general population is 81.3 per cent., the latter being thus also over three times as great.

"Must it be conceded that the blind cannot in some part be made to maintain themselves by honorable employment? Are there not a number who may be enabled in some measure at least to assist in their support? Is it not feasible to provide occupation at any rate as a set-off as far as possible to their idleness, so that they may not be denied the priceless boon of mankind, 'the blessing of toil'? . . . Such is the question now before

us. It is one of very great moment, and next to that of the prevention of blindness itself is the most pressing one in the work for the blind to-day.”⁵

+ The reason for the slow development—If these questions as to the need for industrial training and the ability of city day schools to provide it are to be answered in the negative, then what is the claim of the city day school? On what grounds does it request support? Why should city boards of education enter the field? For persons who are not expected to support themselves, state-maintained institutions would seem to be a desirable form of education and care. Is it not possible that we have arrived at an answer to the puzzle as to why progress in the establishment of city day schools for the blind has been so slow in comparison with the similar movement for the deaf?

+ The teachers of the deaf have undertaken to improve in a very definite manner the preparation of that class of handicapped children for living and self-support. They are advocating the employment of a method of instruction different from that used in the state institutions, because they believe it will tend to reduce the handicap to a minimum. They are undertaking to place the deaf side by side with the hearing in an indefinite number of occupations, by giving them a substitute for speech and hearing.

* What is the claim of the city day school movement for the education of the blind? “The strength of the day school,” says one of its protagonists, “lies in the social advantages growing out of a normal family life and early free competition with normal people with whom the blind

⁵ Harry Best, *The Blind*, p. 46, 473.

* R. B. Quinn

child must later live and work. . . . It is the conviction of the Day School teachers that when a thorough course in manual training is afforded, beginning with the kindergarten and leading up through the grades, trade training may well be deferred until the time when the youth is thinking most seriously of how he is to earn his livelihood. If he has thorough command of his hands, the simple trades usually taught to the blind can be readily learned in a few months by the boy of seventeen. Seventeen is not too late to enter upon the more difficult trade of piano tuning and repairing."

The city day school has no special function—*The city day schools, if the foregoing opinion is representative, have not established any real basis of differentiation from the state institutions.* The social opportunities involved in living in a normal as against a segregated environment is, indeed, important; but by itself it is not sufficient justification for the day school movement. For the very young children it may not be as advantageous as the special supervision and early training at the hands of an experienced housemother and supervisor, the care outside of class-room instruction, provided in the state institutions. For the older children it evidently does not offer as good industrial training as the state schools.

If the institutions have tried trade training for ninety years "and very few of their graduates are working at the trades they learned at school," what are the city day schools doing to remedy the situation? Why must it be assumed that the trade training of the blind is permanently limited to "simple trades" which "can readily be learned in a few months by the boy of seventeen?" Assuming that the blind, taken as a whole, represent a group

of average intelligence, and there is no ground for any other assumption, the simple trades, broom-making, rug-weaving, chair-caning, and reed-work, do indeed not appeal to one as very inspiring or remunerative occupations.

That the state institutions have to a considerable extent failed in ingenuity and in resourcefulness in the development of trade training for the blind is proved by the greater resourcefulness of the agencies which have undertaken the rehabilitation of men blinded during the war. These men, blinded late in life, and in part deprived of complete motivation for rehabilitation by the pension provisions of the various governments, certainly represent a much more difficult problem than children who have never seen. Yet reports indicate a most encouraging amount of success in their rehabilitation.⁶

V. Centralization of City Day School Work Proposed

Are the city day schools prepared to meet this challenge? To the writer it seems that the practice of the city schools from the point of view of organization is such as to make it impossible to meet this situation until a complete change of the point of view is effected. If, in other words, it is absolutely essential to keep the children scattered throughout the city, then it will never be feasible to have the equipment and specially trained teaching personnel for vocational training.

Inadvisability of co-education with seeing—The question may fairly be asked whether the city schools are not

⁶See Bulletin 15 of the Federal Board of Vocational Education. *Disabled Soldiers and Sailors*, Carnegie Endowment for International Peace. Harold Whitehead, "Chain Stores for Blinded Soldiers and Sailors," *Carry On*, Vol. I, No. 6. "Rehabilitation of the Wounded," *Annals*, American Academy of Political and Social Science, Vol. LXXX, Whole No. 169. Pearson, A., *Victory over Blindness*, New York, George H. Doran Co., 1919.

paying too dearly for school intercourse with seeing children by the reduced ability to furnish trade training. The question may indeed be asked whether or not the extreme of distribution of blind among seeing children is as necessary as the city school advocates appear to think. It is true that one of the great advantages of the city day school method is found in the fact that it assists in the creation of a normal atmosphere; but is it not a fact that even were the children gathered in central schools, this atmosphere would be retained?

The convenience of living at home, the mingling during non-school hours with the family, friends, brothers and sisters, and children of the neighborhood—these are definite day school benefits not attainable in an institution. Are they not enough? Is there really a great deal of value in the additional intercourse provided by recitation with seeing children?

Is not this intercourse with seeing children during school hours really a detriment, representing as it does a constant reminder to the blind child of his defect; barring him, as it does, from the formation of friendships with similarly afflicted children? Is it not possible that the school, in its effort to give the blind child the maximum intercourse with seeing children, is really martyrizing him and making him suffer unnecessarily? Does he not in reality need the friendship of other blind children? Does he not in fact need the stimulus that would come from working with a group all of whose members are striving against a similar handicap? Would not the opportunity to play with similarly afflicted children, to work with them, to form comradeships and associations, form a period of repose as against those many other hours when

the child is having ordinary intercourse with the seeing? Would not the element of rivalry count for the blind, as the reminder of his permanent defect in competition with the seeing children now operates against him?

Grading, industrial training, differentiation—Most important of all, centralization of all of the children in a system would enable the school to do graded work, and to overcome its at present admitted handicap represented by lack of the proper opportunities for industrial, musical, physical and other forms of special education. So long as the day school insists on scattering children throughout the city, it will remain in the dilemma of either admitting deficiency in these respects or limiting its work to small children prior to the age when industrial training should properly begin.

Rug-weaving, brush-making, broom-making, and a few other simple manual arts are types of activity that call for little intelligence and result in types of product whose manufacture is not very remunerative. These manipulations are the obvious things to teach blind persons. Exploitation and exploration of the various opportunities of the blind to-day represent a most important problem in this department of education. The city schools ought to devote themselves to this problem. They are far better situated for this purpose than state institutions, for they are in the midst of a variety of wage-earning activities. At present they are paying too dearly for the opportunity of mingling the blind with the seeing children.

It would almost seem as if they were exaggerating the advantages of this mingling. It would seem, too, that they are underestimating the disadvantages involved in

this mingling, disadvantages which are unnecessary. The middle ground would seem to be more advisable. A centralized and segregated school for the exclusive and entire education of the blind, such as is now maintained for the deaf, would combine normal living conditions and experiences with opportunities for forming friendships and for work on a par with other blind children. It would enable the city day school to compete in curriculum facilities with the state institution and, in addition, offer the usual advantages of home in place of institutional residence.

Finally, as has already been indicated, it is only in central schools that advantage can be taken of modern psychological information and technic, by homogeneous grouping and differentiated education in accordance with varying ability.

VI. Summary

The movement for the establishment of day schools as part of city systems for the education of blind children does not seem to be making rapid progress. There are twelve schools in the group of cities here studied, as against a very much larger number of schools for the education of the deaf.

The opinion is expressed in the chapter that this lack of development is perhaps in part due to the failure of the city schools to differentiate their work on educational grounds from that of the residence state schools. At the present time their only valid claim seems to be the one which sets off residence at home and under normal conditions against residence in an institution.

The city schools, like those maintained by the several states, have not made a success of one important phase of the preparation for living, i.e., vocational training. In some other phases of the curriculum they may possibly be regarded as inferior to the residence schools as, for example, in the matter of physical and musical education.

The standard procedure in the city day schools is to locate the children in various buildings throughout the city in groups of seven or eight under the care of one teacher. These children study in their home-room embossed reading and writing as well as typing; they receive some musical, physical, and manual training from this teacher, and they prepare their other lessons in this room. Otherwise they take the regular academic work in classes with seeing children. In some of the cities they go to a centrally located school for industrial work.

The suggestion is made in this chapter that it would be advisable to gather blind children into a single central school for entirely segregated instruction. It would seem that living at home under normal conditions, and with normal opportunities for intercourse and getting about, represents to a sufficient extent the advantages claimed by the city schools. In the centralized school it would be possible to grade work and to organize certain important special features, such as physical education and trade training. The question is raised whether mingling with seeing children, to the extreme to which the system is at present carried in the cities, may not work actual harm, and whether the opportunity for healthy rivalry and the formation of friendships is not very much worth while. By centralization the city would seem to have the opportunity to combine the advantages of the day school

with those of the residence institution, and to avoid the disadvantages of both.

Present practice, as well as theory, provides a teacher for about every ten children. There is little tendency to demand for the blind children a longer compulsory period than that provided for the seeing; but Saturdays, summers, and a longer school day are sometimes utilized to provide time for added and more intensive work.

It is conceded that the institution represents a better place than the day school for the education of children whose home background is poor, and also for the training of the feeble and the incorrigible. On the other hand, the children living in rural districts must, for that reason alone, attend residence institutions. For these children, an interesting experiment is being tried, of providing, with the aid of subsidies from the State, residence in the cities.

Three types of home contact are essential for the education of these children, and should be established by city systems: pre-school training, represented by advice and information given to parents; a constant effort to help the school-child to achieve normal social relationships; vocational guidance, placement, and follow-up work, to help him become, and continue to be, a self-sustaining member of society.

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CHAPTER XIII

THE EDUCATION OF CRIPPLED CHILDREN

I. The Nature of the Problem

Absence of Facilities—"Although there are in the United States many thousands of crippled children, probably as many as there are of deaf and blind, little attention has been given them as a class. They are not even enumerated in the decennial Federal census. While special provision for the deaf and blind children is made in all States, and for the feeble-minded and incorrigible children in most of the States, few States make any special provision for the care and education of crippled children, and in only half a dozen cities are there separate schools or classes for them, and in the schools of most cities, towns and rural districts not even suitable seats and desks are provided for them."¹

It seems but natural that consideration of the problem of crippled children should center primarily about physical welfare, surgical care, cure. After all, restoration eliminates the crippled child as a problem for special education. But even so, Dr. H. H. Hart, introducing a comprehensive study of the status of crippled children made under the auspices of the Russell Sage Foundation and published in 1914, states that prior to the publication of

¹ U. S. Commissioner of Education, P. P. Claxton, *U. S. Bureau of Education Bulletin*, 1918, No. 10.

this report there had been "no comprehensive source of information" regarding the care of these children. "No publication which has thus far appeared treats comprehensively all phases of work for crippled children in the United States, based upon detailed information from all the institutions."

Present status—"Efforts in behalf of crippled children," says Dr. Hart, "include surgical work in hospitals and dispensaries, care during convalescence in institutions, asylum care for incurable and protracted cases, instruction in institutional schools and day schools; also industrial and vocational training in institutions and special schools." To this should be added the fact that the Shriners and the Rotary Clubs of the United States have recently inaugurated most important work for the care and restoration of crippled children.

Crippled children will be found in hospitals, convalescent and asylum homes. In each of these places education is a secondary, physical care a primary, objective. The child is in the institution primarily for remedial care, not education. As will be noted later, some cities furnish teachers to hospitals or hospital wards where no schools are maintained, just as they send visiting teachers to the homes of crippled children.

While a number of the American States maintain hospitals, none of them maintain schools as such, of the kind found in several of the European countries. Types of special educational facilities available other than in hospitals, convalescent and asylum homes—and here we deal primarily with educational organizations, although physical welfare must naturally remain one aspect of the work, are day schools or classes. These are maintained in some

of the cities, as we shall see. In addition, there are, in America, a number of excellent privately endowed schools.

Character of the problem—The problem of the crippled child would seem at first sight to present merely a question of transportation, but it is in fact also a further problem of school equipment, since the cripple frequently requires special seat and desk provisions and is not capable of going up and down stairs. Furthermore, this problem, in the case of the permanently crippled, involves very special curricular consideration, since vocational opportunities for the cripple are so definitely limited by his physical condition. "Crippled children whose cure is impossible," states Mrs. Solenberger in the study referred to above, "or possible only after years of treatment, need a complete system of education which will develop such powers as they possess."

While some work has been done in this field, and some cities are making provision for the care of crippled children, it is an amazing fact that in comparison with the problem presented, very little has as yet been done educationally for these children, who presumably are possessed of average ability to avail themselves of the opportunities of the common school.

From our point of view, no child is crippled who can manage to get along under the ordinary conditions as they exist in school. We should disregard, too, the temporary, though most important, educational work of various state and city hospitals which, independently, or in conjunction with city boards of education, furnish instruction to crippled children. Such work "is always incidental to the physical care of the children. It is often undertaken because a small amount of study amuses the children and

is thought by the doctors to facilitate their cure, rather than because much educational advance is expected.”²

The most important problem involves those children who are permanently crippled and living at home. These children, to repeat the definition of a preceding chapter, are so far restricted in muscular movements as to affect their capacity for self-support. These children cannot attend the standard city schools, and the work offered there is not always suitable to their future. If by special education is meant the effort to minimize a given handicap and to develop compensating abilities, these children must be the objects of very special provisions.

On the physical side, crippled children need transportation arrangements, special buildings to facilitate getting about, and special provisions for the care of health, special equipment, such as suitable chairs and desks, arrangements for a midday meal, open air recreation, etc. On the educational side we face the problem of the curriculum in terms of a future for these permanently crippled children, proper grading, and other questions.

One most important fact regarding the present educational status of cripples in the United States is that “a very high proportion of the crippled children attending special classes are unable to go beyond the grammar grades because the high schools offer no free transportation by stage, and the buildings, often without elevators, have class-rooms on several floors, which are not equipped with special seats or desks. . . . There are as yet no special high schools for cripples in the United States and

² E. R. Solenberger, *U. S. Bureau of Education Bulletin*, 1918, No. 10.

no high school buildings with any class-rooms offering the accommodations needed by crippled children.³

In view of the fact that higher education of college and university grade is available for the deaf and blind, and of the further fact that large sums are being spent in the United States on the unpromising project of training the feeble-minded, it seems tragic that the physically handicapped, presumably possessed of average intelligence, should be practically barred from educational facilities beyond a given grade.

II. Crippled Children in American City Schools

There are a number of American cities which make provision for crippled children other than by establishing special school facilities for them. These cities assign teachers to travel to the homes of crippled children or place a certain number of teachers in city hospitals or homes for crippled children. An incomplete list of these cities includes Buffalo, Los Angeles, Kansas City, Mo., Memphis, Milwaukee, San Francisco, and Youngstown.

Fourteen American cities within the group studied possess actual organized work for the education of crippled children. That the movement is making some progress is illustrated by the fact that there apparently were only six cities which offered special educational facilities for crippled children in 1918, according to the study published by the United States Bureau of Education already referred to in the foot-notes. That there exists at present a great need in every American city which is not being met in many, is made evident by the comparatively large

³ *Ibid.*

numbers of children found in the classes for crippled children in those systems which maintain them.

Every American city, certainly every city within the group here studied, ought to make inquiries regarding the educational status of crippled children within its jurisdiction. In a number of instances there may be private foundations or state institutions caring for these children.

TABLE XIV

THE CITIES WHICH MAKE SPECIAL PROVISION FOR THE EDUCATION OF THE CRIPPLED, THE GENERAL ENROLMENT, AND THE NUMBER OF CHILDREN UNDER SPECIAL CARE

<i>City</i>	<i>School enrolment</i>	<i>Number of crippled children</i>	<i>Number per 100,000</i>
Akron	33,678	25	74
Baltimore	106,036	75	71
Chicago	341,008	700	205
*Cincinnati	66,557		
Cleveland	147,115	109	74
Dayton	25,423	24	94
Detroit	143,677	225	157
Minneapolis	67,619	102	151
Newark	97,771	109	111
New York	1,033,528	2,425	235
Philadelphia	319,263	310	94
Pittsburg	90,298	100	111
*Rochester	52,464		
Toledo	30,402	97	319

* Detailed information not available.

In a majority of the cities which do not report any work for crippled children, there must be a certain number whose education is being entirely neglected. It would seem to be a plain duty of cities which to-day have no facilities for the education of crippled children to make a survey of conditions within their respective jurisdictions.

The cities which maintain facilities for the education of crippled children are listed below in alphabetical order.

The student who is interested to note the facts from the point of view of relative population is referred to Tables I and III in Chapter II. While the number of children under instruction in each of the cities is given, and the percentages of the total enrolment are shown, it is not probable that any deduction may safely be made from these figures regarding the actual percentage of permanently crippled children in the school population. There may be any number of reasons why a larger proportion of crippled children avail themselves of day school opportunities in one city than in another. National and state enumeration of these children should be made. (See Table XIV on page 296.)

III. Problems of Organization

The problems concerning the education of crippled children, once the work has been established, are not numerous. Those who are devoting themselves to the education of these children have worked out general policies with a fair degree of unanimity. The three greatest problems outstanding to-day are the development of facilities where they do not now exist, the problem of the crippled child in rural districts, and the provision of opportunities for education beyond the high school. We shall discuss below the outstanding features in the education of crippled children, from which cities which contemplate entering the field may see the elements of the work in outline.

Transportation—Work for crippled children cannot be undertaken without transportation arrangements. These arrangements vary in detail in the several cities. The board of education operates its own auto-buses in Akron,

Chicago, Cincinnati, Cleveland, Dayton, Minneapolis, Newark, New York, Philadelphia, Pittsburg, and Toledo. This may be regarded as the standard method. In Rochester a philanthropic agency pays for collection and delivery of the children by taxicabs. In Detroit and in Baltimore the police department carries the children to and from school in patrol-wagons. In all cases an attendant in addition to the driver is essential.

Equipment—Several of the cities which maintain facilities for crippled children do so in a building especially set aside for that purpose. Cities which do not have special buildings have set aside rooms suitably placed and equipped for this purpose in well-located school buildings. The equipment mentioned below is listed as in special use in the various cities which undertake the special education of crippled children. All of these schools provide the special equipment necessary for the trade and manual training in which they engage, as will be obvious when we come to a discussion of the curriculum. But certain equipment is essential for all classes of crippled children, regardless of curriculum: special chairs and desks, manual-training and trade-training apparatus, typewriters, equipment for corrective gymnastics; wheel-chairs; kiddy-cars; power sewing-machines; dental and orthopedic chairs; dining-room and kitchen equipment; sleeping-chairs, cots, blankets.

"School rooms," says Mrs. Solenberger on the basis of extensive investigation,⁴ "are located on the ground floor, wherever possible, and the more modern buildings have large elevators. Fire-escapes are provided with more care than in ordinary school buildings. Stairways have

⁴See the Russell Sage study heretofore mentioned.

broad treads, at easy distances; thresholds over which a child with crutches or a brace might stumble are usually absent altogether. Where the school can afford such provision, strips of rubber or cork are laid on hall floors and stairs, and similar material is sometimes used for covering entire floors of gymnasiums and play rooms. In one or two buildings there are hand rails along the walls at low levels, by which paralyzed children or others who can not walk well help themselves along. Toilets and lavatories are conveniently located. The water-closets are either of varying heights or all so low as to be convenient for the smaller children and those who are most crippled.

"In the school rooms adjustable seats and desks are frequently provided. Sometimes the seats are so constructed that one or both sides can be dropped, in case the child using the seat has one or both legs held straight by a brace or plaster; while the backs can be adjusted at any angle and the seat raised and lowered at will. The desks which go with these elaborate seats are also adjustable as to height, and the top of the desk may be moved backward and forward. . . .

"Other schools use desks and seats which can be adjusted as to height, and seats with one central support instead of two side supports, so that there may be more room for a child whose legs are encumbered by apparatus. Many teachers believe that these partially adjustable desks and seats are entirely satisfactory for the greater number of crippled children, and that half a dozen of the more costly drop-seats is a sufficient number in the average school room. At the Massachusetts Hospital School the desks and seats are not fastened to the floor

because it has been found that a child is sometimes able to take a more comfortable position through a slight change in the position of the desk or seat."

Single center or distributed classes?—While, from almost every point of view, it is desirable to centralize the work for crippled children as far as possible, the tiring effect on the children of traveling must be considered, and the larger cities find it necessary to maintain a certain number of well-located classes for cripples even where special buildings and graded work are available. The character of the streets to be traversed, the character of the vehicle and the experience of the attendant, are all factors in settling the problem of how far the child can be transported daily to school. The largest cities have several centers, Chicago, for example, having four schools. On the other hand, the smaller cities find it easy to gather all of the children in one center. Even under the best conditions, an hour's ride in the school bus seems to be the limit for the strongest child. Large cities with extensive outlying districts must resort to a central school and several centrally located classes in addition, or may have to confine the organization to centrally located single classes.

Special care during school hours—Two types of provision are found in practically all of the cities, for general and special care. On the side of general routine, practically all of the cities supply a noon meal, milk in the forenoon, and other facilities, such as cots and blankets for a nap, or sweaters for open-air class work. On the side of special care, one finds provision for special nurses, physiotherapists, and orthopedic surgeons. Sometimes this latter work is provided by the board of health.

IV. Problems of Instruction

Size of classes—The size of the classes for crippled children, where these are gathered in central schools, ranges generally from fifteen to twenty, making cost of actual instruction somewhat higher than for typical children in cities which average larger classes.

Curriculum problems—The general school curriculum of the city is followed everywhere, and in a number of cities nothing else is offered, limiting the additional cost of the education of these children to higher teacher cost per pupil, transportation, provision of luncheon, and the extra cost of special furniture. But there are two important curriculum additions or modifications found in the majority of the cities, without which the work can hardly be said to be the specialized education which non-typical children require. These modifications are concerned with physical and vocational education.

On the physical side, crippled children require special work in corrective gymnastics, work which should really be carried on under the direction of a surgeon. On the vocational side, it is essential to place the crippled child in a position to support himself on an independent basis wherever possible. Two general classes of work are stressed, which we may describe as mental and manual.

The crippled child is possessed of his full mental faculties, and, where these are unusual, he may be directed into vocations which are carried on without regard primarily to physical effort. In other words, music, art, literature, and other phases of creative work, which ordinarily find their place in the curriculum as preparation for the best use of leisure, assume a vocational aspect in

the case of the highly endowed crippled child. In his case, the school may make a very special effort to exploit particular aptitudes.

When we come to the manual trades, we find a rather extensive list of occupations for which crippled children are being trained. The teachers of these children have, apparently, been resourceful in finding remunerative occupations in which children with this type of handicap may engage. No city teaches all of the trades listed below, but one or more of them will be found in every one of this group of cities:

Artificial flower-making	Hammock-making
Basketry	Knitting
Book-binding	Lace-making
Clay-modeling	Millinery
Cobbling	Printing
Crocheting	Rug-weaving
Design	Stenography and typing
Dressmaking	Toy-making
Engraving	Weaving
Fine needlework	Woodwork

V. Three Outstanding Needs

1. **Placement and follow-up work**—It is not enough to teach the crippled child a trade. He must be placed and kept at work. Not only parents and other relatives, even strangers, may be willing to pauperize the crippled child or adult by misplaced sympathy. Not only must the crippled child be placed at work; he must be kept there. "It sometimes happens," writes the director of placement work in New York City,⁵ "that a child who

⁵ Miss Carolina G. Ranzone.

loses the first position in which he was placed will, on account of the over-sensitiveness characteristic of the handicapped, become an idler and street beggar rather than face being reminded of his deformity when applying for a new position."

The problem is one of rehabilitating the handicapped, replacing with self-respecting, independent support the historic assumption of the inevitableness of charitable support in idleness—the minimizing of the handicap by training for remunerative productive work within its limitations. To carry this out effectively requires a placement and follow-up division which keeps in continuous contact with former pupils.

2. **The crippled country child**—What is the status of the crippled child whose home is not located in a city where facilities for the education of cripples are found? There are provisions in a number of hospitals for instruction while the crippled child is there. There are a number of private residential institutions for cripples. On the whole, systematic provision to reach and educate all crippled children has not been made. The National Government does not enumerate crippled children in the decennial census. The state educational authorities do not enumerate these children. The cities for the most part take no cognizance of crippled children.

In the case of the blind and the deaf, we found that they have traditionally been educated in state institutions, and the question was asked whether that form of training was as desirable as city day schools would be. In the case of the crippled we find no state activity outside of state hospitals where children remain only while they are under treatment, but the question may well be

raised whether in this instance state care in residence institutions would not be preferable to city day classes with their problem of transportation, lack of grading, limited facilities for trade training, and the exclusion, by this arrangement, of country children from educational opportunities. With this question we shall deal in the following section.

3. High-school training for crippled children—It is still true that there are no special high-school facilities for crippled children in the United States. In many instances these children are able to attend the regular schools when taken there by parents or when transportation is provided by private philanthropy. In some instances the cities are attempting to do some high-school work in the regular classes—an effort that must fall short of the work of the standard high school. Many children who require, in addition to transportation, specially constructed buildings and furnishings are barred from the standard organization and equipment of the high school. There are no high schools organized in terms of their handicap.

VI. State Schools for Crippled Children

It is obvious that special high schools cannot be established for cripples except possibly in one or two of the largest cities in the country. This being the case, it seems reasonable to demand that state-wide institutions of state-wide character, or, if necessary, national institutions of secondary grade, be established for these classes. In the case of the secondary and higher education of cripples, we obviously come to the point at which the American practice of local unit control of the public schools

breaks down. The American States are now caring for the deaf and blind, and are spending large sums on the education of the feeble-minded and delinquent. The higher education of the crippled should no longer be neglected.

In view of the tendency, noted in the two preceding chapters, to extend the city day school education of the deaf and the blind at the expense of the residence state institutions, it may not seem impracticable to suggest that the plant thus released be employed for the education of crippled children. While assisting these children by minimizing the difficulties of travel to and from school and centralizing orthopedic and therapeutic work, these schools would, in the case of crippled pupils, not be subject to the same charges of incapacitating children for normal intercourse now voiced against the institutional care of the blind and deaf.

What such a state institution might be like may perhaps best be indicated by describing one or two excellent existing schools. The reader's attention is called to the advisability of locating these institutions in large urban centers, to enable a certain proportion of the children of the State—those living in the city where the school is located—to remain at home and make use of the institution as a day school. One of the schools to be described is a country-wide school maintained in Copenhagen by the Government of Denmark; the other is a privately endowed institution located in Philadelphia: ⁶

"The mother school was first started in Copenhagen in 1872, and is still the only one in Denmark. From this

⁶See the report of the commissioner of education for 1919 and the Russell Sage Foundation study heretofore referred to.

many in other countries have been patterned. In this school many trades are well developed, the aim of which is to fit the pupils to go out into the world and take positions that will render them self-supporting.

"An attempt is being made to help the pupils to 'learn to do things that pay,' or, according to Miss Peterson, the head of the school, to teach them 'to do their own living.' The institution has five divisions, namely:

"I. *Clinic*, where patients are treated, and bandages, wooden legs, special corsets, boots, etc., are supplied. These are made, at the order of the doctors in attendance, by the pupils in the workshops, some of whom have become teachers and are now holding positions in other institutions.

"II. *Workrooms*, (a) where bandagemaking, moldmaking, corsetmaking, saddlery, forging, and shoemaking are taught, the articles made being for the use of the crippled. Here are numbers of pupils without hands, wearing appliances which enable them to hold a tool and steady the material worked upon; (b) school of handicraft and manual work, consisting of wood carving, bookbinding, brushmaking, joinery, dressmaking, weaving, needlework, housekeeping, cooking, and office work. The age of the pupils varies from 14 to 26.

"III. A *home*, where pupils from the country live during apprenticeship. Dinner is supplied to children from the city as well as those in residence. All the furniture of this home is made by the children, and is of most careful and exquisite workmanship.

"IV. *Child's School*, where the rudimentary branches are taught. In addition, emphasis is laid upon the musical training, the singing being unusually fine.

"V. *Recreation home*, at the seaside, for the most diseased patients, accommodating 44."

The Widener Memorial School for Crippled Children was opened in 1906, is located in Philadelphia, and has a capacity of one hundred children. It is located on a site of thirty acres.

"There is a large central administration and hospital building, flanked by four smaller buildings and connected with them by glass-enclosed passageways which are heated in winter. The isolation building, head gardener's cottage, engineer's cottage, and stables with rooms for some men employees, are apart from this central group.

"The main hospital building has kitchen, storage rooms, and sleeping rooms for maids in the basement. The first floor includes reception and office rooms, examining rooms, dentist's room, laboratories, the children's dining room and gymnasium. The second floor has two wards with adjoining sun parlors each accommodating 34. One of these wards is for boys, one for girls. Between them are smaller wards for acute or post-operative cases, surgical dressing room, lavatories, and linen closets. On the third floor there is a surgical suite comparable with those in the most completely modern general hospitals, including etherizing room, operating room, recovery room, sterilizing room, two rooms for X-ray photographic work, a special room for examination of the eye, ear, nose and throat, surgeon's lavatory and dressing room, and storage rooms.

"The cottage for the older girls, and the one for the older boys, of similar design, include in each case library, dining and play rooms, a dormitory with 12 beds and 10

individual rooms for children, and an office and a suite of living rooms for the house mother or house father. Another cottage is the school building, with two grade class rooms and a kindergarten room used also for hand work classes. The fourth cottage serves as residence for the physician, superintendent and nurses. There are separate cottages for the chief engineer and head gardener, and rooms over the stable for men employees. The isolation building can be divided into two parts, each with examination room, ward and bath for children, nurses' room and bath and kitchen. It is used for isolation of infectious diseases and for isolation of children just admitted. A chapel has recently been erected near the central group of buildings in which services are conducted every Sunday.

"A summer home at Longport, New Jersey, has been recently built. It is a large bungalow in the shape of a hollow square with interior court and occupies a block of land on Atlantic Avenue, facing the ocean."

To be admitted, children must be permanently crippled, yet not absolutely helpless; no lung tuberculosis cases, no feeble-minded or backward children are received. Only those capable of becoming at least partially self-supporting are accepted. Parents or guardians must sign an indenture binding the child over to the trustees of the institution until he shall reach his majority. Children are admitted in groups at widely separated intervals, in order to make as infrequent as possible the concentration of effort necessary to prevent danger of possible infection to the children already in the institution.

All children are discharged at twenty-one. In some cases, where a trade has been learned, they may be dis-

charged as early as age eighteen. A boarding home is maintained on the grounds of the institution planned for discharged children who are partially self-supporting. They pay to the school for board such sums (not to exceed the cost) as they are able to pay from their earnings.

VII. Summary

Permanently crippled children who are unable to attend the regular school because of inability to go there, who require special facilities for seating and working when they get there, represent a problem of special education. Not only do these children require transportation, specially constructed buildings, and specially furnished rooms; they also require provision for midday meal, for corrective work by means of gymnastics or physiotherapeutics, and special curriculum features that will train them for a self-supporting future.

The education of crippled children is temporarily taken care of in a number of hospitals throughout the country, permanently taken care of in a number of privately endowed homes for crippled children, and rather inadequately cared for in a number of cities by means of visiting teachers who give them some instruction in their homes. Fourteen American cities have established special school facilities for crippled children and care for approximately 4292 pupils.

The very existence of special provision in these fourteen cities indicates that a distressingly large number of crippled children are probably being deprived of educational opportunities in other sections of the country. The Federal Government should make an enumeration of these children at the next decennial census, as well as

a study of their educational status. The several States should make surveys of the educational status of crippled children. All cities which do not now maintain facilities for the education of these children should face the problem of determining what educational opportunities, if any, are being provided for crippled children within the scope of these cities and, consequently, the nature of the obligation of the boards of education of these cities.

From the point of view of organization, the special problems involved in the education of these children concern transportation, equipment, and special care during school hours beyond that ordinarily provided. In the matter of transportation, most cities provide their own buses. Sometimes a philanthropic agency provides transportation by paying taxicab charges or otherwise. Sometimes the police department uses its equipment and transports the children in patrol-wagons. An attendant, in addition to the driver, is always needed.

By way of equipment, a number of cities have buildings specially designed for use in the education of crippled children. Where these are not available, special rooms must be set aside with a view to easy access, a maximum of air and sun, and capacity for housing the special equipment. In all cases there will be needed special types of seat and desk, wheel-chairs or other means of easy getting about, equipment for resting, napping, and open-air work, equipment for corrective orthopedic or gymnastic work, and, finally, the special equipment for trade training in which the school may be engaged.

Under the heading "special care" must be noted the practice usually followed of providing the children with

a midday meal, and the provision of physiotherapeutic or other orthopedic correction work carried on by specially trained persons under the direction of a surgeon.

The problems of instruction concern mainly the curriculum. Where crippled children can be gathered in considerable numbers, they are usually grouped in classes ranging from fifteen to twenty for each teacher. The standard curriculum in use in the particular city is followed. But two modifications are important. On the side of physical training special work is necessary, as was pointed out in the last paragraph. Then there is the special consideration of vocational training for independent existence. In this connection the school should be especially alert to foster abilities in the few children who may show a high degree of aptitude for the arts, for literature, or for other creative work such as costume and other designing. For the mass of the children, the teachers of the crippled have been resourceful in developing a large number of remunerative trades.

Three problems of an outstanding character remain to be considered: (1) Placement and follow-up work, intended to locate the crippled child who has been trained for remunerative work and to keep him employed. (2) A general extension of school opportunities for the crippled in cities which do not now offer such work and, particularly for crippled children living in country districts. (3) The present almost total lack of means for the high-school education of crippled children can no longer be disregarded.

For the purposes of educating crippled children who live in the country, or in cities which do not have special facilities, and for the purpose of offering high-school work

to all crippled children, the proposal is made that the States establish residence institutions for the education of this class of non-typical children. Judging by the movement for the education of the blind, and more particularly the deaf, in city day schools, it would appear that most States will soon have available plants for this work, requiring only remodeling and new furnishing and the acquisition of equipment adapted to the needs of these children.

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PART V
IN CONCLUSION

CHAPTER XIV

TWELVE THESES IN THE FIELD OF SPECIAL EDUCATION

I. There Are Exceptional Children Who Require Differentiated Educational Treatment

Our social philosophy, as a national group, demands democratic principles as basic in education. These are expressed in universality of opportunity. Some children, by virtue of superior ability or marked deviation from type, should not be or are not capable of being educated with the main group by the usual methods. For these children equality of treatment is either not desirable or not possible, but equality of opportunity remains an obligation. The fulfilment of this obligation, which is as important for the social good as for the individuals involved, implies a classification of types of deviation, a general philosophy for the education of exceptional children, sets of special principles and methods applicable to the several types of deviation, and administrative organization to put principles and methods into practice.

Disregarding minor deviations which can be cared for by flexibility of instruction within the ordinary groups; disregarding, too, major deviations which present problems other than instructional, such as health, that do not require special educational treatment, we find seven types of deviation which do require special educational consideration. These may be enumerated

under three main heads as follows: I. Deviation for causes primarily mental: (1) the super-typical; (2) the sub-typical. II. Deviations for causes primarily temperamental; (3) the incorrigible; (4) the speech defective. III. Deviations for causes primarily physical: (5) the deaf; (6) the blind; (7) the crippled.

II. The American State Has Definite Obligations in the Field of Special Education

American public education is, everywhere, in the control of local units within the several States, and therefore cannot anywhere in the fullest sense be state-wide in character. In consequence of this method of organization, there exist within the American commonwealths inequalities of educational opportunity which depend, in part, on the place of residence. It is particularly true that there exists always inequality of opportunity as between rural and city children, invariably discriminating against the country child.

Attempt has been made everywhere, but in varying degrees, to reduce these inequalities of opportunity by state action. One of the methods has consisted of legislation that sets up standards to be complied with by all units—legislation which sets up minimum requirements in such matters as length of term, preparation of teachers, period for compulsory education, type of text-books to be used, character of the curriculum. Another method has been the equalization to some extent of financial support back of the education of the individual child, by means of the distribution of state funds to the local units on the

basis of enrolment, funds which in part are raised by state-wide taxation.

In the case of the children whose education is here under discussion, the inequalities of opportunity are so great as to represent, so far as concerns their education, an almost complete breakdown of the practicability of the method of local unit control of education. The reasons are readily indicated. We deal here with groups of whom there are only a few per thousand or hundred thousand of the child population. This means that their education is only practical from the point of view of expense in those communities whose enrolment is so large that there are found enough deviates of any given group to warrant the establishment of educational facilities—a state of affairs which operates definitely to bar from educational opportunity the isolated country child or the child residing in a comparatively small city.

Under the circumstances, state participation in the solution of this problem is unavoidable. Until some policy of state participation in their education is devised, these children will not have the opportunities which democratic principles imply as their individual right, or which plain self-interest implies so far as community welfare is concerned. Persons who are not trained for self-support must eventually be kept in idleness at the expense of the group.

Two kinds of participation by the State are possible:

(1) The State may maintain special residence institutions for the education of these children. This the American States have done so far as concerns the education of the blind and the deaf. But education in state residence

institutions is not always desirable in the cases to which it has been applied, as the cities are demonstrating by progressively taking over the education of the deaf, and it is not at all possible or desirable in certain other cases, as for example, in the education of speech defectives.

(2) For certain purposes, therefore, it is highly desirable that the States offer special financial assistance to the local communities in order to equalize the educational opportunities of defective children, and participate directly in this very costly procedure. The State of Minnesota has set a notable example in this regard, worthy of the consideration of every commonwealth in the American Union.

In that State there is paid annually out of the state treasury to the local unit of school control the sum of two hundred and fifty dollars "for each deaf child instructed" in an approved school. The State makes a provision for the payment of three hundred dollars for each blind child instructed, and provides fifteen hundred dollars "for each teacher engaged exclusively" in the education of children suffering from defective speech. The State provides one hundred dollars each toward the education of sub-normal children, and two hundred and fifty dollars each toward the education of crippled children. Similar provision will, it is to be hoped, soon be made for the education of highly endowed children. In each instance the law sets standards for teachers, curriculum, and other aspects of the education of defectives, as a condition for the payment of the subsidy. How this action of the State of Minnesota tends to equalize the educational opportunities of children in that State is fairly obvious.

III. The Non-Typical Rural Child Is Not Receiving Fair Treatment

The inequalities of educational opportunity operating to deprive the country child of educational training have been outlined in the preceding section. It remains here to note various possibilities of solving this important problem. Three lines of action may be examined, after excluding the communities which by means of state aid or in some other manner are now enabled to offer the particular type of education needed by the particular type of deviation.

1. Education in Residence State Institutions—This method is now in effect for the deaf and the blind, and has definite limitations. If it is educationally a sound method, then it applies to the city and the country child alike. If, as is now being contended, institutional education is not desirable for the deaf and the blind, then it is discriminating against the country child to send him to an institution merely because of his rural residence while city children are enjoying day school opportunities. On the other hand, residence facilities for crippled children would, in the opinion of the writer, be desirable for city and country children alike and should immediately be undertaken.

2. Maintaining country children in the City—The city of Cleveland, in the education of the blind, is experimenting with another possible solution. With the aid of a state subsidy, similar to the one in effect in the State of Minnesota and above referred to, the city is able to receive children from rural districts and house them in cottages during the school year. This system has possibilities of extension. If the State offers a subsidy and

the child resides in a district which, in spite of the possibility of securing this subsidy, cannot engage in the special work, why cannot the child be sent where such work is being carried on?

In the case of the blind and the deaf, day school may be preferable to institutional care. In the case of speech defectives, there are no institutional facilities, and the country child who does not come to the city simply has no opportunity for correction at all. The subsidy should be made available so that city schools may extend their facilities to country children.

3. **Limited consolidation or tuition payment**—Many cities are surrounded by territory outside their legal limits as defined by charter, but in fact part of them economically because of easy transportation conditions. This territory, though independent from the point of view of school control, might combine with the city for the special purpose of the education of exceptional children. In many parts of the country, too, there are cities which, though having independent governments, in fact form contiguous economic and social wholes. Such cities, if unable individually to maintain all the facilities for the education of exceptional children, might combine for this particular purpose. The same end might also be achieved if contiguous school districts which do not maintain special facilities arranged to pay tuition for their children in districts which do maintain such facilities.

IV. The Pre-School Interest of Non-Typical Children Requires Special Consideration

The children who are finally to enter the school are being educated for six years prior to their entrance. The

point of entrance has been somewhat arbitrarily placed. There was a time when the home was the sole educating means. The question may be asked whether to-day even the first six years should not be invaded by the school. The practice of sending children to kindergarten is not very extensive in America. Pre-kindergarten education can hardly be said to exist. In this respect, practice abroad differs. The nursery school has an important place in European educational provisions.

Whatever may be the desirable practice so far as concerns normal children, it is a fact that for the education of exceptional children the establishment of pre-school facilities is imperative. This pre-school work should have two phases.

1. **Parent training**—In the first place, the parents of non-typical children are usually overwhelmed with their problem and lack the necessary knowledge regarding the best care of these children, mental as well as physical. It is time the school replaced the family physician. The teacher who will be called upon to face the problem of preparing the child for life within the terms of his handicap is the person who should know best how to advise the parent.

The mental state of the parents of any type of exceptional child whose rearing presents extraordinary problems may be gathered from this statement by the mother of a deaf child: ¹

As a mother of a deaf child I want to place before you . . . a plan for the education of the parents of little deaf children. Into your home comes a disease or a sudden awakening to the

¹ See Wright, J. D., *What the Mother of a Deaf Child Ought to Know*, New York, E. D. Stokes Co., 1915.

meaning of existing conditions, and you find that your child is deaf. At first your thought is of physicians. They fail you. Advice from friends and advertisements from quacks pour in upon you; still you find no comfort and no help. You stop talking to the child; your pity takes the form of indulgence. You who are trained teachers of the deaf can hardly realize the need of advice about matters perfectly obvious to you, but the need exists. While you are laboring for the education of the deaf, and for their sakes are training teachers to carry on the work, there are in almost every home that shelters a little deaf child blunders being made that will retard his development and hinder your work for years to come—blunders that a little timely advice might prevent.

2. Pre-school clinics—The second type of work referred to is clinical in character, including both the psychologist and the surgeon. The speech defective represents perhaps the best example of the problem that the psychologist will face. The blind child with residual vision that may be saved, the deaf child with residual hearing, the crippled child—these represent the problem of the physician.

Eventually the interest of the school will extend downward below age six and result in the careful supervision of the physical and mental rearing of the child within the particular limitations of his handicap during the pre-school period.

V. The After-School Interest of Non-Typical Children Requires Special Consideration

The department of the special education of exceptional children must maintain facilities for supervision during some years after the child has been dismissed from school. Sometimes the interest is needed on educational grounds, as for example, in the case of speech defectives who may

slide back into their old habits under stress, and would, therefore, benefit by further sympathetic instruction. Sometimes the interest is needed on social and psychological grounds, to help maintain morale and courage among former students who are continually trying to make headway against a handicap. The gathering of these former students for mutual encouragement serves a useful purpose. Sometimes this interest is needed on economic grounds and expresses itself in the form of a placement office which assists students in finding work in the first place and in finding new positions when necessary.

VI. The Sub- and the Super-Typical Require Special, Differentiated Educational Treatment

The American school has been confusing the idea of equality of opportunity with that of equality of treatment. The one is justifiable from every point of view; the other is neither justifiable nor practically possible. It has always been known that there are great differences in intelligence among children. It has, however, hitherto been difficult to distinguish exactly lack of intelligence from lack of application. Years have therefore been required to determine whether or not a particular child had capacity.

To-day it is possible to measure potentiality with an astonishing degree of accuracy. On the basis of this measurement it is possible to make statements regarding the educability of the child, predictions as to his ultimate attainments. Longer to disregard these facts is unthinkable. The school must be reorganized so as to offer differentiated educational opportunities that will tax to

their utmost capacities the average, those whose ability is below average, and those who are very highly endowed. As things stand to-day, the American public school is distinctly not a good means for the education of well-endowed children.

VII. Truancy and Incurability Represent School Problems Which Have So Far Received Too Little Scientific Consideration

With very few exceptions, it may be stated as a fact that the American schools have not yet applied to the problems of truancy and incurability that scientific procedure which is revolutionizing other departments of school practice. For the most part, educators who think of this problem still appear to be in the state of mind of that speaker at a recent meeting of the National Education Association who advised those charged with the education of incurable and truant children, and gathered in conference at that meeting: "Go back to your schools. Pick out your so-called worst boys. Find out whether heart-hunger as well as stomach-hunger may not be one of the symptoms of the disease. . . . Why should any child's heart or soul be allowed to starve to death for want of a little sympathy and affection? Does not some blame belong to the school if its teachers fail to feed these starving souls?"

When only seven cities make provision for the special education of incurable girls, and in the schools and classes maintained for boys by thirty cities the number of pupils sent to these schools and classes varies from 30 to 513 per hundred thousand of the school population, it becomes evident that there is lacking basic compre-

hension of the problems involved. Yet the proper meeting of this situation is one of the most important ways in which the school may help the organized community.

Failure to discover and to provide special educational treatment for the potentially criminal means that the children will later turn up in the courts, reformatories, and other penal institutions. Conversely, the discovery and education of these children prior to the commission of serious offenses means, to the extent to which the process is successful, the lessening of antisocial actions and the saving for useful living of a certain percentage of the persons involved.

Too few of the educators charged with the care of incorrigibles understand with specific clearness the fact that very low intelligence is a major cause of incorrigibility and that the psychological examination of every child who presents a school problem should be the first step toward a diagnosis of his case. Every definitely institution case—and in the opinion of the writer half the cases are of this type—should be sent to an institution for the feeble-minded. Of the remaining cases, curriculum adjustment, correction of the home environment, and special attention to the causes of erratic behavior will be found effective. Until action such as is here outlined is taken, the disciplinary classes will continue to punish children for the crime of being dull.

VIII. The Remedial Education of Speech Defectives Represents the Least Understood Problem in the Field of Special Education

The remedial education of speech defectives represents that phase of special education in which the American

city schools have made the least satisfactory progress. Although the handicap to be dealt with is most grave; although, in contrast with every other type of special education, the effort aimed at in the training of these children is the removal of the handicap rather than education within its limitations; although the teachers are on the whole optimistic regarding the percentage of children who may be cured by training; this work has been extended to less than one fifth of the school population of the United States.

Almost every problem connected with the removal of defects of speech by means of training is still an open question. There is no established method of diagnosis. There is no established mode of educational procedure. There is no established classification of speech defects. There is no highly reliable information regarding the number of speech defectives per thousand of the child population.

The remedial education of speech defectives represents that phase of special education in which there is the very greatest need for investigation, experiment, and study on the part of an outside agency, such as one of the national educational foundations. The American city has shown itself ready to adopt, but not very competent to develop, new educational processes. The need to-day is for a large-scale study to be carried on in some urban center coöperatively by psychologist, surgeon, and pedagogue, with a view to discovering the causes of speech deficiency, to listing the defects that will respond to surgical effort, to classifying those which need training for removal, to outlining a mode of diagnosis and a teaching method for

each type of defect, and, finally, to providing a teacher-training agency.

Meanwhile the need of the moment is the improvement of the work by three definite steps: the establishment of central full-time schools; the establishment of pre-school clinical facilities; the establishment of an after-school agency for follow-up work.

IX. The Day School Education of the Deaf Has Been Established as an Appropriate Activity for the Public Schools

Regardless of the probability that for many years to come the state schools for the education of deaf children must continue to remain an indispensable instrumentality, the progress of the movement to establish day schools for this exceptional class in the cities has now reached the point where it may be said that no city which fails to maintain such school or classes can rightfully regard itself as in line with modern progressive educational theory and practice.

The outstanding problem in the education of the deaf centers about the question of method. The day schools are committed to the oral method, a most alluring theory, but they have so far failed to support their enthusiasm with objective evidence to prove the general applicability of this method. We must determine how large a proportion of the deaf population really can master the oral method for practical purposes. We must develop a diagnostic test which will enable us to predict regarding a deaf child that he will meet with probable success with the speech method. Neither conspicuous successes nor

failures furnish proof regarding the oral method of instruction. Ultimately we must learn in quantitative terms what is the proportion of the deaf population to whom this obviously more desirable method applies, in the sense that they can master it for practical purposes within a reasonable time. Having determined this, we must learn how to select these particular children from the general deaf child population.

X. The Desirability of Establishing Day School Education for the Blind Still Constitutes an Open Question

The establishment of day classes in the cities for the education of the blind has not been making rapid progress, and, in the opinion of the writer, there is for the present no reason why it should do so. The fact that in a few instances the home environment is better for the child than that of the state institution represents for the present the only argument for the establishment of classes in the largest cities, and this argument is counterbalanced by the admitted superiority of the state school in certain respects.

The city school or class for totally blind children will not deserve consideration until such time as this school has differentiated itself from the state school by the development of a special educational theory of its own.

For the present, the admitted drawbacks of the city classes more than counterbalance the few advantages. They have failed, to an even greater extent than the state institutions, to establish means for the education of the blind in terms of their handicap, which, in this instance, means primarily education for self-support.

Both the blind and their teachers have to a considerable extent failed in this respect. Until a movement can claim with vigor that it is educating any particular type of handicapped children for self-support to a very considerable extent by the minimizing of the handicap and the development of compensating abilities, we are dealing with asylums or "homes," not with schools.

XI. Educational Opportunities for Crippled Children Are Inadequate throughout the United States, and Should Be Extended

Every American city which enrolls a thousand or more children in its public schools and has not made special provision for the education of crippled children is in all likelihood failing in its obligation to offer equal educational opportunities to all. There are comparatively few private or philanthropic agencies for the education of crippled children. Yet the American cities have been unpardonably slow in facing this problem. No city school system has done its full duty by the children of the community until it has made a survey to determine the number and the educational status of crippled children of school age who cannot avail themselves of the standard facilities.

The problems involved in the special education of crippled children are few, and largely solved. It is simply a matter of extension of the work, now far behind the demand, that represents the immediate need. In all likelihood the education of crippled children represents a field in which the State should become active, perhaps more active than the city. In contrast to the education of the deaf, on whose behalf there is now an active move-

ment from the state residential to the city day school, it is quite probable that, with the exception of the largest cities, the great need in the education of the crippled is for state institutional care. Most particularly should the State undertake to furnish high-school opportunities.

XII. Unexplored Fields in Educational Psychology Represent Important Ultimate Contributions to the Education of Non-Typical Children

There are five unsettled problems in the field of the education of exceptional children, which must await psychological experimentation, and as many contributions from the field of educational psychology.

1. **Truants of average intelligence**—When truancy for reasons of low mentality or poverty or for other social reasons has been eliminated, there remains the truant of normal mentality for whose erratic or even antisocial behavior no established reasons as yet exist. The causes of truancy, and more particularly their remedy, whether they rest with reorganization of school procedure or particular adjustments of the truant, remain to be studied.

2. **Causes of speech deficiency**—The problem of the diagnosis of speech defects, not only for the purpose of classification but as well for the purpose of locating the origin, and from that point of view outlining the remedial procedure, represents ground not yet won. It is entirely possible that speech disorders will be found to have originated in nervous experiences which the child and family no longer remember, so that careful study will be required to discover them if, as seems not unlikely, some cases of this sort are found to respond to the method of psycho-

analysis. Even without the use of this procedure, the careful tracing of the origin of a speech defect to a severe nervous shock or inherited nervous instability or peculiarities of early raising may frequently be found to indicate the most helpful mode of remedial procedure.

3. **Special psychology of the deaf and blind**—The deaf and the blind, even under the most desirable conditions, live in a world quite different from that of the normal person. In many instances they receive their mental impressions in a way different, and very likely always they differ in emotional life, from the normal group. They are far more likely to develop unhappy, not to say unhealthful, morbid mental states.

Is it not possible that a study of the typical psychologies of the deaf and the blind, the character of the stimuli to which they are subjected, and the nature of the usual response, would enable us to add to their happiness by more perfect adjustment to the terms on which they must participate in our society? Is it not possible that such knowledge would enable us, beginning with early infancy, to train deaf and blind children by the application of the special principles of mental hygiene applicable to their particular defects?

4. **Intelligence tests for the deaf and blind**—A more specific phase of the psychology of the blind and the deaf still unsatisfactorily developed is the intelligence testing of these groups. In many respects it is more important, from the narrow point of view of instruction, to determine the intelligence status of these children than to get the same information for the child population as a whole. So much by way of planning the child's education, vocational and otherwise, depends on intelligence. A highly

satisfactory method of determining intelligence for these classes is still a great need.

5. **Diagnostic test of aptitude for oral method**—A narrowly instructional but very important problem in the education of the deaf involves the development of some tests which will indicate degree of aptitude for the oral method. At the present time all city schools and many state schools undertake to train children by means of the oral method. It is agreed that a certain percentage of children, entirely undetermined, are unable to profit by this method. The present practice simply consists of trying them out with it for a number of years and then giving up if they are found incapable of learning lip reading and speech.

A better way can undoubtedly be devised, given the ingenuity. Doubtless ability to succeed with the oral method to a degree that is practicable presupposes certain aptitudes that can be discovered, enumerated, and tested for. That a certain degree of intelligence is important, goes without saying. This need for intelligence tests was pointed out in the last paragraph. But it is not probable that all of the "mentally deaf" are simply of low intelligence. Certain factors in addition there undoubtedly are, factors physical, nervous, and emotional in character. It will be a fortunate day for the deaf when a reliable test has been devised, capable of selecting those children who are endowed with reasonable aptitude to profit by the oral method.

APPENDIX

The reader will have noted, in the preceding chapters, specific data regarding the present status, in city school systems, of five of the special groups studied, i.e., incorrigibles and truants, speech defectives, the deaf, the blind, the crippled. This information was secured by the writer in the course of a survey of actual school practice in the care of the classes of children under discussion for the purpose of discovering the extent to which the city schools have taken over their education; what procedure and method are being followed; what practical problems are presented for solution; and what experience is teaching in the matter of the care of these children.

This study presents a survey of the educational status of these five groups in the sixty-eight cities of the United States, which, by the federal census of 1920, had a population of one hundred thousand or over.

It cannot be claimed that the conditions found in these sixty-eight cities present a picture of the probable educational status of these children in the country at large. In fact, the contrary is undoubtedly the case. American cities almost uniformly present educational opportunities superior to those in rural communities. In the case of the particular classes under discussion, it is believed that these sixty-eight largest cities probably present facilities

superior to the smaller cities which ordinarily may equal them in the quality of general school work. The groups dealt with, particularly the blind and the deaf, are found so infrequently in the child population that only where there are a great many thousand children of school age will there be enough of the children under discussion to warrant expenditure for special equipment and teaching personnel.

While, therefore, there is no intention to claim that the classes under discussion are not being given attention in the smaller cities, and the reader can perhaps think of some smaller city arbitrarily excluded from this list, in which one or more of these classes are being offered special educational facilities, it is probably safe to assume that in the sixty-eight cities studied one finds the bulk of what is being attempted in America, that in no other American grouping totaling a population of 27,429,520 will as much work be found, and that the cities studied present all of the problems and difficulties that have to be faced.

The survey here presented was made by questionnaire and consumed almost an entire year before the data were gathered. The writer did not content himself with sending out a questionnaire and then tabulating the data from that proportion of the cities that made returns. A first questionnaire was sent to the superintendent of schools of all cities to determine the different types of activity being carried on and to locate the person in each city who was in the best position to deal with each class of children being studied. Five sets of questionnaires were then sent out, covering each of the five classes of children, and in each instance addressed to a person directly responsible for and, therefore, presumably interested in the work.

Complete returns were secured on the first questionnaire and nearly complete returns on the five sets that followed. In addition, considerable correspondence was engaged in to clear up questionable points and to secure amplifications where details were lacking.

In spite of a great deal of painstaking labor it would be hazardous to claim that the facts here presented are free from error. They very likely are not. Some of the stumbling-blocks to accuracy that have to be overcome, even after all the usual precautions in formulating the questionnaires have been taken, may be noted as indicating sources of error that may have remained undetected. Cities which have regularly organized attendance departments, or whose children are sent to county establishments by the juvenile courts, may reply that they have special facilities for the care of incorrigibles and of truants. Cities which contain private institutions for the deaf and the blind, or are the seat of the state institution, thinking of the matter from the point of view of the child, may state that they offer facilities for these children. Cities engaged in sight-conservation work may carelessly reply that they offer work for the blind, when the intention is to discover day schools for the totally blind. Finally, county homes for crippled children may be intended where claim is made of the existence of such facilities in a city; and work in lip reading for the deaf and hard of hearing may be referred to as instruction for speech defectives. Fortunately, the basic value of this study does not depend greatly on the most complete accuracy of the data.

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